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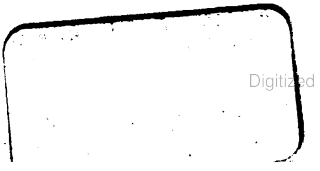

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PROCEEDINGS

OF THE

Kansas Medical Society.

THIRTY-FOURTH ANNUAL MEETING.

TOPEKA, KANSAS,

WEDNESDAY, THURSDAY AND FRIDAY,

MAY 2, 3, AND 4, 1900.

C. H. NETTELS, REPORTER.

TOPEKA,
THE A. D. BAUKR PRINTING CO.
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Surgery, ...	Dr. P. D. Hughes, Kansas City.
General Medicine, ...	Dr. J. M. Latta, Millerton.
Gynecology, ...	Dr. M. L. McCrea. Winchester.
Ophthamology and Laryngology,	Dr. A. C. Graves, Pittsburg.

EX-PRESIDENTS.

Dr. S. B. Prentiss*	Lawrence	1859
Dr. J. P. Root*	Wyandotte	1860
Dr. C. A. Logan	Leavenworth	1866
Dr. Albert Newman	Lawrence	1867
Dr. John Parsons*	Mt Pleasant	1868
Dr. M. Bailey*	Topeka	1869
Dr. M. S. Thomas*	Leavenworth	1870
Dr. Daniel C. Jones	Junction City	1871
Dr. W. H. Cochrane*	Atchison	1872
Dr. H. K. Kennedy	Topeka	1873
Dr. R. S. Redfield*	Ft. Scott	1874
Dr. Tiffin Sinks	Leavenworth	1875
Dr. H. S. Roberts	Manhattan	1876
Dr. W. L. Schenck	Osage City	1877
Dr. C. C. Furley	Wichita	1878–1879
Dr. B. E. Fryer	Ft. Leavenworth	1880
Dr. J. H. Stuart	Lawrence	1881
Dr. G. W. Halderman*	Paola	1882
Dr. D. W. Stormont*	Topeka	1883
Dr. C. H. Guibor	Beloit	1884
Dr. H. O. Hannawalt	Arvonia	1885
Dr. F. D. Morse	Lawrence	1886
Dr. L. A. Buck	Peabody	1887
Dr. J. Bell	Olathe	1888
Dr. C. C. Green	Winfield	1889
Dr. J. E. Minney	Topeka	1890
Dr. J. E. Oldham	Wichita	1891
Dr. F. F. Dickman*	Ft. Scott	1892
Dr. Geo. W. Hogeboom	Topeka	1893
Dr. W. R. Priest	Concordia	1894
Dr. R. S. Black	Ottawa	1895
Dr. F. M. Dailey	Beloit	1896
Dr. C. A. McGuire	Topeka	1897
Dr. James A. Lane	Leavenworth	1898
Dr. Charles Gardiner	Emporia	1899

*Deceased.

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PROCEEDINGS.

WEDNESDAY, MAY 2—8 P.M.

The Kansas Medical Society convened in thirty-fourth regular session at Representative Hall, Topeka, Kansas, at 8 o'clock p.m., Wednesday, May 2, 1900. Doctor L. Y. Grubbs, of the Committee on Arrangements, in the chair. Rev. A. S. Embree was introduced and offered prayer. Dr. Grubbs made the report of the Committee on Arrangements and introduced Captain J. G. Waters, who made the following address of welcome:

Mr. Chairman, Ladies and Gentlemen: This is not the first time that to me has been delegated the honor of welcoming this distinguished fraternity. In my first address I said everything in the world that I could that could emanate from the heart. I do not desire to repeat those same words, but I have this to say tonight:

If there is in the vast communities of civilization, one citizen conspicuous in the confidence of the people, respected by everybody, of superb judgment, of unfailing skill, of great experience and most thorough knowledge, he is the country doctor.

If there is an individual who stands in intimacy and affection as a member of the family, who is relied on in extremity of sickness and health, who holds each trust inviolate, he is the family physician. If there is any one who follows bent and opportunity, engaging his talent in a single direction, whose ships course breasts but a single star, who stands on the skirmish line of investigation, whose vision is forever centered on the shadows that envelop discovery, he is the medical man who dedicates his life to some special work of his profession, and with his knowledge and persistence wrings from obdurate nature a reluctant confession and throttles the sphinx until he compels it to speak.

If there is a hero, or a philanthropist deserving of christian laurel and unfading bay, it is the student of the medical profession who follows truth and finds an anodyne for every human misery, hushes pain in the arms of sleep, frightens fright, and robs the world of pestilence, epidemic and calamity; who gives his

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finds to mankind without fee, who awaits no thanks nor asks the tribute of royalty or copyright.

If there is a profession who deserves immortal honor the more and finds it the less, through which runs the noblest chivalry of a calling, whose merit has earned monuments that now pedestal warriors, emperors and statesmen, it is the medical profession.

To such distinguished men, to such a profession, the Capital gains but one more bright ray of reflected glory when it gives to them its wholesome cheer, and greets them with hearty welcome within its gates.

Dr. J. W. Porter of Pittsburg was next introduced, who made the following response to the address of welcome:

Mr. President, Ladies and Gentlemen: For seven successive years this has been our meeting place; for seven successive years we have enjoyed the hospitality of your city; this fact alone will more fully demonstrate our appreciation than any word of mine can do.

In all these years we have felt, we have known, that we were welcome—not alone by the eloquent addresses that have been delivered to us by your eminent citizens, but from the thousand of acts that evince true hospitality; all these speaking in more powerful language than your eloquent statesmen and divines.

I do not wish to be understood as decrying these addresses of welcome; far from it, as from your previously demonstrated hospitality, we know they are not mere formalities, not "sounding brass and tinkling cymbals." Doctors, in common with the rest of the Genus-homo, are human: and as such, an expressed appreciation is grateful to our ears; and when this welcome is voiced as eloquently as it has been tonight, it is doubly grateful.

We are not vain enough to mistake and apply all this hospitality as personal, but we accept it as representatives, as a recognition and appreciation on your part of our profession. This is especially grateful at this time, when charlatanry is seemingly running riot, and many otherwise fairly intelligent and worthy citizens have lost their heads. Unfortunately, with many of the human family, occultism and mysticism appeals to them more strongly than rationalism. Hence, any sophism, no matter how absurd, that appeals to their imagination is readily accepted. This has been true since early history, and doubtless will be true until the millenium.

Thus, Mediaeval history gives us "The Royal Touch" for the scrofula, which gave to this form of tuberculosis the name of

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"King's Evil." "The Weapon Ointment" that was applied to the weapon or an imitation of it, that inflicted the wound. "The Spmpathetic Powder" applied to the blood-stained garment. These delusions, with many others, numbered their victims amongst all classes. All of these have their modern counterparts equally absurd and as equally ephemeral.

For the ancient and mediaeval dupe, we have much sympathy; as on the part of the medical profession, scientific study was practically unknown. Dissection was rarely practiced. The human body seldom yielded the secrets of anatomy to the scalpel. The vital functions of animal tissues was but little studied. Hence, our physiological knowledge was meager. The microscope, imperfect as it was, and more imperfectly used, had thrown but little light on pathological processes, and bacteriology was undreamed of.

It is related that when the learned Syndenham was asked, "with what book to begin the study of medicine," he replied "Don Quixotte."

So meager was our scientific knowledge, that as late as the beginning of the last century, Laennec, a great French medical writer, characterized physiology and pathology as "vain amusements of the mind."

In the absence of positive knowledge, the physician in sheer self defense, was compelled to resort to secrecy; and so, by the ignorant and superstitious people of his time, was regarded as a wizard and sorcerer.

It is not surprising that contemporaneous literature is replete with satirical sayings and epigramatic characterizations of the doctor. Thus, Shakespeare makes Timon of Athens say to the thieves, "Trust not the physician, his antidotes are poison. And he slays more than you rob. Takes wealth and lives together." Nor can we hardly blame Limierre for this epigram:

> "Nature and sickness fight, a man the prize.
> If nature wins, he lives; if sickness, dies;
> Blind men (called doctors) come the fray to part,
> With random strokes of weapons forged by art;
> If chance they hit the foe, the day's their own,
> If nature gets the hurt the patient's gone."

In contrast to the former secret and mysterious methods of investigation, is our present open and scientific way. Tomorrow this Society will meet openly, to which meeting the laity are not only admitted but invited.

Notwithstanding the progress we have made, that must be

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patent to all, incomprehensible as it is, there are some who are trying to retard this progress when they themselves are the direct beneficiaries. I refer especially to a class, who through mistaken sympathy for the lower animals, closely resemble the ancient Egyptians in animal worship, who suffered defeat and destruction rather than endanger the cats and dogs that preceded the invading army of Cambyses.

Thus, their modern analogues, through their false sympathy, by misrepresentation, seek to influence the public mind against the humane use of living animals for physiological and biological research. I do not wish to be understood as opposing "the prevention of needless cruelty to animals;" no scientific investigator is cruel, notwithstanding reports to the contrary.

The whole superstructure of medicine is founded on the humane principles of "the alleviation of pain and the prolongation of human life." The number of innocent lives rescued from that destroyer, diphtheria alone, attested by thousands of grateful mothers, all owe their lives directly to the guinea pig. This is only one instance cited to show the beneficent results of this manner of research. A mere enumeration of all would require more time than I have at my disposal. Suffice it to say, that all our positive knowledge of physiology and biology, embracing as it does the poisonous and therapeutic action of drugs, is directly dependent upon it.

Most of the so-called great discoveries are usually the culminations of the united thought and investigations of many persons along the same and similar lines; and not the least of these agents are the reports in the medical papers, of the clinical and other observations of the general practitioner of medicines, who, despite his arduous and ofttimes onerous duties, takes time to observe and record the various phenomena of disease. Perhaps, under the inspiration of our leaders, who, like Epaminondas to his Theban army, cheers us "one step forward," so, in this battle for progress as in our real, but less worthy battles, the private soldier, represented by our great mass of observant, thoughtful, practicing physicians, perform quite as important a part as the generals, represented by Pasteur, Koch and other medical leaders.

Carlton says of the Country Doctor:

> "But perhaps it still is better that his busy life is done.
> He has seen old views and patients disappearing one by one."

This is true as applied to the "old time" country doctor, but not to the modern ones who have caught the spirit of advance-

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ment; and through the medium of medical journals and medical societies is abreast of his city brethren. While his opportunities for scientific study are not so great, his social duties are less exacting, thus giving him more time for utilizing his opportunites. He has also learned with Goethe "That no man fears men, but he who knows them not—And he who shuns them may not hope to know them." So, during the next three days he will mingle with his city brothers "And thus in strife of well tried powers he grows, feels what he is, and feels himself a man."

We feel proud of our profession. It has breathed the spirit of progress of the nineteenth century and has kept pace with its advancement, which advancement is manifested by the lessened death rates, and consequent lengthening of human life—due largely to sanitation and hygiene, but assisted by scientific medication. Still we do not claim perfection any more than the electrician or any other scientific investigator. But reasoning from the past, the close of the twentieth century will witness achievements that are almost dazzling to contemplate; nor is the American physician a laggard in the race.

Virchow, in his address at the International Medical Congress at Berlin, said, "The Americans lead in surgery and midwifery, and all that the world ever knew of dentistry it learned from America." We feel that the physicians of Kansas have at least contributed a humble part to this advancement; and to the Kansas Medical Society part of this credit we hope is due.

The life of a physician is not a round of pleasure. He can not, like Shakespear's Biron, hear a terminable sentence like this:

> "A twelve months shall you spend and never rest,
> But seek the weary beds of people sick."

His self-imposed sentence is indefinite, interminable, unending, with perhaps no respite save what is gained at these meetings.

Hence, these meetings, these greetings, these receptions, these welcomes, this hospitality, are to us like an oasis to the traveler in the desert. They are a part of the silver lining to the cloud of our responsibilities, cares and detractions; and speaking for the four hundred members of this Society, I tender you our sincere thanks.

Dr. Charles Gardiner, President, then took the chair and delivered the following annual address:

The closing years of the nineteenth century show the greatest achievements the world has ever seen: unparalleled activity in

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every department of human knowledge. The printing presses are sending out a deluge of literature on every conceivable subject. The people demand this and pay for it, and as a result there are a large number of people who have a smattering of this or that particular cult, and, who are, in their own estimation, capable of solving all the questions that have been unanswered for mankind through all the ages.

As a result of this half training, notwithstanding this great mental, moral and material activity, the number of fads, fancies and frauds that are foisted upon the people under the name of science is not diminished, and superstition holds its votaries as firmly as when electricity went unharnessed through the clouds. Every man is his own politician, theologian, lawyer and doctor. It was said to Paul, "Much learning hath made thee mad" and it is written elsewhere, that of the making of many books there is no end and much study is a weariness to the flesh. We have here set forth the strain of mind and body from study, but this was centuries ago.

In these days of wonders a rapid firing college can in ten days turn out a doctor with an earning capacity of $25 a day and capable of treating nearly every known disease, and all this without regard to the former training or ability of the student. Some physicians may think that ten days is too short a time to impart so much knowledge, but to me it seems altogether too long. It ought not to take more than one minute to hand the money to the professor, and he ought to be able to write the new doctor's name in the ready made diploma in nine minutes; ten minutes are enough in this busy age for a little transaction like that. The professor is severly and villianously practical. The candidate must be untrained, unsophisticated, and scientifically soft; at best, he could be only a half-baked scholar, and a half-baked scholar is an underdone goose. All the goslings are not graduates, and the cackling and quacking fills the land and the goslings are done up very brown. Sometimes a patient recovers, and the press and pulpit and hand bills and the dear old ladies and the silly young ones and mistaken and misguided men herald the cure abroad and marvel at this "great miracle that has been performed in our midst." But all these people have something in common with humanity. They have bodies and aches and pains and needs. They think they exist, they think they know they exist. What, then, shall we say for that most highly cultured and utterly utter cult that denies the existence of matter and the consciousness of

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existence, and asserts that the pleasures and pains we experience are delusions. That there is no body; therefore there can be no pain; there is no stomach, therefore there can be no hunger; and yet these very people work for money to buy clothes and food to supply imaginary needs for an imaginary body. Why do they labor and spend their money for dinners and yet make such claims? This would be a hard question for the uncultured to answer, but for the sharpened intellect of the cultured scientist the answer is easy; the labor, the money and the dinners are not real; they are all delusions.

We have heard so much about the wonders of the present day, and the vast increase in knowledge, wealth, fighting power and expansion of territory, that we are in a pleasant frame of mind in regard to our times, our country and our profession. We crow about the Anglo-Saxon race and Kansas and the wonderful advances made in medicine; until it would seem that all change is progress. In this paper I propose to discuss one of the changes that is not true progress. With the improvement in machinery and greater enterpise of manufacturer and skill in production, medicines have been presented in compact form, reliable in action and free from inert material, and divided accurately into suitable doses.

Pill making is a fine art; great improvements have been made in other directions as well. The tablet triturates when made so as to be soluble are active and convenient and meet a want with many physicians; simple remedies can be used to advantage in this form; but the elaborate compound, tablet triturates, named after various men, diseases and organs, are not scientific, and should not be depended upon. When you use a pill, tablet or a mixture of that character, some one else has done your thinking; and if you allow anyone to do that your usefulness will soon cease. The man who will not think soon becomes unable to think, and the lazy man grows more lazy.

Along the line of ready made preparations commercialism has gone wild. Competition has been severe and manufacturing firms have tried to push their sales by advertising, drumming and the distribution of free samples. Nearly all manufacturing houses put some preparation of unknown composition on the market and claim to make it better than any other maker. "Ours is the only genuine. Specify our make on your prescription and you won't be disappointed. Ours is the great and only preparation that ever reduced mortality to a cipher and ruined

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the undertaking business." In order to boom these various preparations, tons of literature are sent all over the land; every mail brings journals, reprints and circulars to our offices. Men noted in the profession make themselves notorious writing endorsements of these various compounds. Dr. Unknown, comes in, too; he writes an article purporting to be a report of a case, but which is a puff for some ready made compound and gets his pay in reprints which he distributes among his patrons and his wife's relations, and behold, he becomes an author. No doubt you have all had a blank from an enterprising house asking you to fill in the name of a patient and the name of the disease treated by our preparation, and our corps of experts will write an article and publish it in a medical journal over your signature. We do this not to encroach too much on your valuable time, and, on the quiet, we prefer to do the writing ourselves because we know what will benefit our preparation and the truth should not be spoken at all times.

Drummers, active, energetic business men, thoroughly educated in literature of their respective houses—come into our offices in a matter-of-fact way and proceed to lecture us on the action of foods, remedies and up-to-date therapeutics; they tell us many strange new things that are soon forgotten by us and that they will sing to some other tune a year hence.

Doctor, have you tried our new preparation, Eureka? Most wonderful thing ever discovered; will revolutionize medical practice within a year. Contains all the good qualities of every other medicine and none of the bad after effects. Pleasant to the eye, taste and smell and the price is right; it is a medicine and a food; as a laxative it is very successful in the following combinations:

R Sulphate Magnesia, 1 oz.
Eureka, 4 oz.
Aquæ menth pip., 1 dr.
M Shake well and take in two doses.

As a food Eureka shows its wonderful power. Patients can live on it indefinitely. The following combination is very valuable:

Porterhouse steak, one pound.
Eureka, one ounce.

Rub into steak and broil over hot fire and serve with bread, butter and coffee; the Eureka gives the meat a peculiar juicy flavor and makes it very nutritious. Specify our make on your prescription; this is very important; there are several other

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houses making worthless imitations that will disappoint you. Only the genuine made by us produce these wonderful results. He leaves us samples and literature and departs with a pleasant smile. A sudden loneliness steals over us, and we are sorry that that bright, vigorous, enthusiastic personality has left us, but we feel relieved to think that in ninety days he will return and tell us how much his house has improved Eureka, and how the first preparation was rather crude, and how at great expense his house bought up all the raw material and removed the slightly bitter taste, and how they discovered that formerly they heated it too much and did not chill it quite enough, and now they had a better conjure on it, and a medical journal of their own to advertise it and a hospital to treat patients.

The prescribing of these ready-made trade-marked compounds with fictitious names is all but universal. There are very few physicians who do not use some of them. Many hospitals buy them by wholesale. Now and then a manufacturer publishes the supposed formula of their preparation, but the compound cannot be put up from the formnla given. It is not a working formula. It is a catch, and places the compound in the semi-secret class. The secret compound should not be tolerated by the scientific physician, and the semi-secret compound is no better; both deserve our severest condemnation.

Prescribing the ready-made trade-marked preparation is injurious to the medical profession in many ways:

1. It destroys the value of the record of medical cases. The student of the future will not know what treatment the patients really received, or in what way A's Eureka differed from B's Eureka; but even if these preparations were valuable we have no assurance that the standard will be maintained. We are told that the interests of the house will cause them to maintain the standard. We can easily recall many of them that have been modified and improved and some of them dropped in the last decade. The manufacturer absolutely creates market for these goods by advertising, drumming and free sampling; not one of them could live a year if the house ceased to push them. When we consider the immense sums expended in advertising and introducing these preparations, we can easily see that a one dollar package cannot contain more than 25 cents worth of medicine; it is no wonder they can be made pleasant to the taste, beautiful to the eye and free from sediment.

The taste of many medicines cannot be concealed and if they

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are present must be recognized; this can be readily shown by taking some of the compounds from the U. S. Pharmacopiae and comparing them with the proprietary compounds said to have the same strength.

2. Cases recorded as treated with these compounds represent a lost opportunity to add to the sum of medical knowledge.

3. The effect on the druggist must be considered. Formerly he required skill in the compounding of prescriptions; now when a prescription comes in for a ready-made compound, the ability to read the prescription and the label, and copy the directions, and change the preparation from one container to another, is the measure of skill required. From this fallen estate the druggist logically takes to counter-prescribing. Why should he not prescribe the same ready-made compounds that the doctor writes for. The enterprising manufacturer has been educating the doctor and the druggist with the same literature; they are both retail distributing agents for the manufacturer, but the druggist has the best of it, he gets a percentage while the doctor works for nothing. The next necessary step is for the druggist to get a preparation that will leave a larger profit, and the just as good but cheaper compound goes into your prescription and the great crime of substitution is perpetrated. Every manufacturer tells you, you cannot get results from the other fellow's preparation, and there you are, disappointment and weeping and wailing and gnashing of teeth. Right here the druggist does a little business on his own account, by wrapping your prescription in a circular advertising and extoling some other ready-made compound, and if your prescription fails to cure as soon as the patient expected, he knows where to get a medicine that never fails and he does not have to pay the doctor for the prescription.

4. There is a moral contract implied if not expressed when a patient consults us. He comes to us because he thinks we have a knowledge of diseases and remedies, and can apply remedies so as to effect a cure. We are in honor and duty bound to give him our best knowledge and skill, and to effect a cure as rapidly and pleasantly and as economically as possible. Are we giving the patient the results of our experience and skill when we select a remedy on the dictum of a third party who could not examine a patient or diagnose a disease or prescribe a remedy intelligently and whose only object is to effect a sale. Is that our best knowledge which repudiates the results of years of the recorded observation and experience of the medical profession and gives our

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too confiding patient that wonderful new but untried compound, Eureka. To me it seems we are not prescribing for him out of the fullness of our knowledge, but, out of the depths of our credulity. Are we meeting the economic side of the question, when we prescribe a remedy that costs $1.00 and which may contain 25 cents worth of medicine, but cannot contain more.

Instead of prescribing these ready-made compounds, I ask you to prescribe from the U. S. Pharmacopœia, because it is a standard, accurate, scientific, non-secret and honest. Every formula is a working formula, and if not the best obtainable is certainly among the best, and is always reliable. Of the men who compiled the Pharmacopœia I need not say that as pharmaceutists, chemists and physicians they are the equals of any corp of men employed by any manufacturing concern; and that they are competent to compound a prescription as palatable and pleasant as it can be made and contain a given quantity of medicine. They do not sacrifice efficiency for palatibility, but consider both; while the reverse of this is often the case with trade-marked compounds. The Pharmacopœia is ours; we can make it what we want. Some will say you don't have new discoveries in the Pharmacopœia; it is ten years behind the times. The profession is like the Gauls, eager for new things. Of all the innumerable so-called remedies that have been introduced to medicine during the last fifty years, how many are worthy of a place in our armamentarium today? Not more than a dozen, two for each decade. When we consider the number of tried and proved remedies in the Pharmacopœia we see there is enough to meet all the indications. As soon as new remedies are discovered and proved to be of value they can be added. If necessary, a year book could be issued, giving an account of all new remedies that have a scientific basis and that are non-secret. Of course all extravagant claims would be excluded and an accurate, scientific description and discussion of the product given. If any discoverer or maker would not submit his product to this test, it should be let severely alone. Prescribe alkaloids when you can, because alkaloids are definite chemical compounds and when pure are of unvarying strength. They can be given in small doses frequently repeated until the therapeutic and physiological effect is obtained, and then the interval can be increased or the dose diminished, as the physician thinks best. In this way we can meet the indications for remedies that are efficient in action, accurate in dose and pleasant to take. When the whole drug gives better results than the al-

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kaloids, which is true of a few drugs, the assayed preparation can be used with considerable precision and certainty of results. In all cases we should, as far as possible, prescribe simples for in this way the physiological effect of drugs can be better observed and understood, and the result assigned to the real agent, and our knowledge made more precise. In most cases the indications for treatment are clear cut and definite and do not call for a multiplicty of drugs. The indications are to control pain, to reduce fever, to relieve nervous tension, to stimulate the emunctories, to conserve the powers of life by rest in bed, and increase the vitality of the patient by pure food, pure water, and pure air.

Some sixteen years ago eleven distinguished physicians conceived a project to build a monument in honor of Dr. Benjamin Rush. They brought the matter before the American Medical Association at Newport, Rhode Island, and received considerable encouragement and support and some money. An organization was effected and a "Rush" monument committee appointed with Dr. Gihon as president. From year to year the chairman has reported progress and money has been coming in slowly until last year the contributions and interests from investments amounted to $10,000. In his report for 1899, Dr. Gihon says: "At the Philadelphia meeting the sum of $100,000 was fixed by common consent as the amount which should be contributed by the profession to erect a suitable monument." At that time there was a roll call of States, and delegates pledged their several constituencies each for its quota for this commendable project. Colorado and New York each pledged $2,000. A year later these pledges were redeemed; the permanent secretary was directed to communicate with the officers of the State Medical Societies, urging them to appoint without delay, representative members of the committee from the several States and Territories. In answer, six States responded, and $353.50 have been added to the monument fund. When Kansas was called Dr. Daily who was then president of the Kansas Medical Society, and the only delegate present, arose and said he had no authority to bind the Kansas Medical Society for any amount, but Kansas would do her part, and he would guarantee $100.

This money has never been paid, but Dr. Daily feels in duty bound to pay it unless the society takes some action in the premises. I think some action should be taken for I don't see how Dr. Daily could help saying Kansas would do her part. She always has. She always will.

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The secretary of the navy has donated one of the best sites in Washington for the monument. We have the site, we have the Rush Monument Committee and $10,000, and we need $90,000 more. Of the eleven men who conceived this project, ten are in their shrouds, Dr. Gihon has been retired from active duty by reason of age, and last year resigned the chairmanship. He says: "After fifteen years of persistent, earnest effort the time has come when I must admit, I can do no more. I transfer this duty to some younger, and I hope more successful worker."

Let us consider briefly the life and services of Dr. Rush, one of the greatest among the great men of the American revolution. He was a man who had the courage of his convictions. By advocating and signing the Declaration of Independence he put liberty and life in jeopardy, and for that act a price was set upon his head. Among his early writings he discussed slavery, intemperance and health, and was always advocating and working for the bettterment of humanity, and continued in the great work during his whole life. As a physician he was at his best; he was always at his post of duty. During the epidemic of yellow fever in Philadelphia, in 1793, we find him visiting from 100 to 120 patients a day. Through that long terrible winter at Valley Forge when the bravest were becoming disheartened and losing hope, when men were dying from sickness, hunger and cold, Dr. Rush ministered to the needs of the army, and by his sublime personality and character upheld the hands of Washington in the darkest hour of American history. When that ragged, half-starved, half-armed but now disciplined army left their blood-stained foot-prints on the march to Trenton, Princeton, Brandywine and Germantown, Dr. Rush cared for the wounded and solaced the dying; and later retired from the army with no recompense save that which comes to full grown souls from the consciousness of duty done. As a statesman he was farseeing and deep thinking and unshaken in his convictions of right. He wrote and worked for the abolition of slavery, because slavery was the opposite of liberty and unjust. Franklin and Rush and a few others advocated the abolition of slavery under the new government, but they were overruled as too radical and impracticable, and Columbia stood before the nations with feet of clay, a Republic founded on two antagonistic ideas, freedom and slavery. The Declaration read: "All men are born free and equal," but meant, "except some who are born slaves." Franklin and Rush did not give up the struggle, but organized the Pennsylvania Society for the

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Abolition of Slavery, with Franklin as president, and he was succeeded by Rush, and both labored in the cause of freedom until called to come up higher. Time proved the wisdom of Franklin and Rush and their compatriots who would have abolished slavery. Had their counsels been followed the civil war might have been avoided.

How slavery became the bane of this great land and almost compassed its destruction you know. The civil war was the necessary outcome of the failure to abolish slavery. Few realize that the civil war was the greatest armed conflict of all history. More men were killed in one day under Gen. Grant than have perished in South Africa since that war began; more men were killed in three years than England has lost in battle after 800 years of almost continuous fighting. After four years of war the Declaration of Independence was made to mean what it read and slavery was abolished. That was humanity's contribution to freedom, for men of every race and clime and condition died in defense of the flag. By the out-pouring of treasure, by the sacrifice of health and limb and life the feet of clay were transmoted into enduring bronze, and, thank God, all the bitterness of sectional strife has passed away and we stand one people with one purpose under one flag. Now can we say—

> Lift up your eyes my own Columbia,
> Lay aside foreboding fears;
> In the book of fate 'tis written,
> Thy flag shall wave a thousand years.

Dr. Rush was a citizen of the world. a statesman of high order and a man of unflinching courage, and unquestioned integrity. We admire him for his many good and strong qualities; but while he was great in all directions, he was greatest as a physician. We have fraternal feelings and regard for him, and he has peculiar claims on us. He is ours, and by honoring him we honor the medical profession. If the 100,000 regular physicians of this country should take this matter in hand the monument could be built in a few years.

In closing may I not ask the profession of Kansas to honor this great State, to honor yourselves by helping to erect this monument to Dr. Benjamin Rush a representative of the highest type of American manhood; one of earth's greatest physicians, and one of America's most profound and farseeing statesman.

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On motion of Dr. W. L. Schenck, those parts of the President's address relating to proprietary medicines were referred to a special committee of three, and those parts relating to a monument to Dr. Rush were referred to a special committee of three.

The President appointed as a special committee on proprietary medicines, Drs. W. L. Schenck, W. F. Sawhill, and B. D. Eastman.

As the committee on Rush monument the President appointed, Drs. C. F. Leslie, A. B. Peters, and Andrew Sabine.

Here the Society arose and adjourned until 9 o'clock, a.m. May 3d.

MORNING SESSION.—THURSDAY, MAY 3, 1900.

The Society convened pursuant to the adjournment.

The Secretary called the roll of members, and on motion the roll was adopted as the roll of the Society.

The minutes of the last meeting having been printed and distributed among the members, their reading was, on motion, dispensed with.

The President appointed Drs. Alkire, Dillon and Esterly to fill vacancies on the Board of Censors.

To fill vacancies in the Judicial Council, the President appointed Drs. Hawley, Judd, Porter, and Boyle.

The President appointed as an Auditing Committee, Drs. Peers, Powell and Sawhill.

On motion of Dr. E. T. Shelley, of Atchison, to appoint a committee of which Dr. W. E. McVey should be chairman, to memorialize the Legislature to take steps looking to the establishment of a State Sanitarium for consumptives, the President appointed Drs. W. E. McVey, E. T. Shelley, and S. G. Stewart.

The Judicial Council, to which was referred certain amendments to the Constitution and By-Laws proposed at the last annual meeting, made the following report thereon:

We, your Judicial Council, beg leave to make the following report:

We offer the following amendments to amendments of constitution proposed last year.

Art. III, Sec. 1. By inserting the words "in good standing," after the word "Society."

Art. IV, Sec. 1. By striking out the words "and a publishing committee of five" after the phrase, "and a judicial council of

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five." By inserting the words, "and treasurer," after the phrase "except the Recording Secretary," and by adding the words "to hold office for five years," at end of Section 1.

Art. VI, Sec. 1. By inserting the word "of" after the word "that," in first sentence of this section.

Art. VII, Sec. 1. By striking out the words "three-fourths," and inserting in their stead, the words "two-thirds."

Art. IX, Sec. 1. By striking out the words "three-fourths," and inserting in their stead the words "two-thirds."

By-Laws.—Art. I, Sec. 2. By inserting the words "and arrange the program for the following year, arrange the proceedings of society for publication, and intersperse the papers by their subjects, variety throughout the entire program," after the words "ordered by the society."

Art. 1, Sec. 4. By inserting the words "attend to publication of same in book form, 8mo size, uniform cloth binding, after the word "and," in first sentence.

Art. I, Sec. 5. By striking out the words "arrange papers for publication, make" and insert in their stead, the word "print." And also by striking out the words "the treasurer," and inserting in their stead the words "his successor," and by inserting the words "giving list of number and names of members in good standing, and also of suspended members" after the word "treasury."

Art. I, Sec. 7. By striking out the word "society" and inserting in its stead the word "state."

Art. II, Sec. 1. By inserting the word "four" after the word "into." By striking out the words "and Electro-Therapeutics," and inserting the words "and Obstetrics" after the word "Gynecology." And by striking out the words "committee on program hereinafter provided for," and inserting in their stead, the word "president."

Art. II, Sec. 2. By striking out this entire section.

Art. III, Sec. 1. By striking out this entire section.

Sec. 2. By striking out this entire section and inserting in its stead the words, "the nominations for offices shall be held in open meetings of the society, and the persons receiving a majority of votes cast shall be declared elected, and the voting shall be by ballot."

Art. IV, Sec. 1. By striking out the word "three" and inserting the word "two" before the word "years," in the third sentence.

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Art. IV, Sec. 2. By striking out the words, "three-fourths" and inserting in their stead the words, "two-thirds."

J. E. HAWLEY, *Chairman.*
J. W. MAY.
W. R. PRIEST.
C. E. JUDD.
GEO. A. BOYLE, *Secretary.*

The President stated that the Judicial Council, since the reference to it of the proposed amendments, had themselves suggested some unimportant amendments. A motion was made to adopt the amendments to the amendments. A discussion followed, whereupon, on motion of Dr. Priest, the entire subject was laid upon the table.

Here, the Society arose and adjourned until 8 o'clock p.m.

EVENING SESSION.

Dr. L. H. Munn, Treasurer of the Society, made the following report, which was referred to the Auditing Committee:

TOPEKA, KANSAS, May 1st, 1900.

Mr. President and Fellows of the Kansas Medical Society—I have the honor to submit the following report:

Cash received from your former Treasurer,..... $263 30
Cash received in dues from members of the Society,..... 165 00
Cash paid out upon the order of your President and Corresponding Secretary,..... 351 75

Of this $275.00 was for printing the proceedings of the Society for the year 1899, and the balance, $76.75 for stationery, stamps, etc., used by the different officers, leaving a balance to your credit of $76.55, with all debts paid to date.

Respectfully submitted,
L. H. MUNN, *Treas.*

Dr. Peers, chairman of the Auditing Committee, reported that the Committee had carefully examined the report of the Treasurer, found the same correct in every particular, and recommended that the same be approved. On motion the report was adopted.

The President read a communication from Dr. H. H. McClellan, of St. Marys, asking a demit from the Society. On motion the demit was granted.

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MORNING SESSION—FRIDAY, MAY 4, 1900.

The Secretary, Dr. W. E. McVey, offered the following resolution, touching the appointment of a Commissioner of Leprosy, which was adopted:

Whereas, A national leper law has been proposed providing for a commissioner of leprosy, and

Whereas, Dr. E. S. Goodhue whose investigation of and contact with leprosy in his hospital work in the Hawaiian Islands has pre-eminently fitted him for the office, and was mainly instrumental in securing the action already taken toward the passage of the law; therefore be it

Resolved, That this society recommend Dr. E. S. Goodhue's appointment to the proposed office of Commissioner of Leprosy, for his special qualifications.

Dr. Meade offered the following resolution, providing for the appointment of a committee to draft a medical bill, which was adopted:

Resolved, That it is the sense of the Kansas Medical Society, in annual session assembled, that a committee of five be appointed by the President, to draft a medical bill to be presented to our Legislature next winter, and press the enactment of the bill into a law to regulate the practice of medicine in this State.

Dr. Meade offered the following resolution, looking to the appointment of a National Medical Board, which was put to a vote, and defeated:

Resolved, That it is the sense of the Kansas Medical Society, in annual session assembled; that a National Examining Board be created, whose certificate will entitle the recipient to practice medicine and surgery anywhere under the Stars and Stripes.

The President appointed as a Committee on Legislation, Drs. Hollenbeck, Mulvane, Schenck, Lane, and Meade.

The Committee on Rush Monument fund made the following report which was adopted.

We, your committee on the Rush Monument Fund, desire to make the following report: We respectfully recommend, that the nominating committee of the Society, be made a committee to raise funds for said monument. And we further recommend, that in counties not represented by the nominating committee, the President shall appoint one member from each county, not

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represented by the nominating committee, to act with this committee in raising said funds, in a manner deemed best by themselves.

Respectfully Submitted,

C. F. LESLIE.
A. B. PETERS.
ANDREW SABINE.

The Committee on Stormont Library made the following report, which was adopted:

TOPEKA, KANS., May 2, 1900.

Mr. President: Your Committee on Stormont Library beg leave to submit the following report of the State Librarian, which will give the purchases of the past year and the balance on hand. As yet the new Library room is not furnished but we live in hopes that next year we may be able to see our collection in suitable quarters.

Very Respectfully,

C. A. MCGUIRE, *Chairman.*

List of moneys expended from "Stormont" fund since May 1, 1899:

June 15—A System of Surgery. Vols. 1 to 4; Lea Brothers	$28 00
July 8—In Sickness and health. J. W. Roosefelt	5 00
July 12—Twentieth Century Practice of Medicine, Vol. 13	6 00
Aug. 21—Books of Lea Brothers, Phila. See Accession Book, No. 36041.	150 66
Oct. 19—Books of D. Appleton. See Accession Book, No 36043	111 38
Oct. 19—Sajous Annual & Analytical Ency. Prac. Med. Vol. 4 ½	6 00
Oct. 24—Twentieth Cent. Practice Medicine. Vol. 18	4 00
Nov. 9—System Diseases of the Eye. Vol. 4	6 00
Nov. 20—Twentieth Cent. Prac. Med. Vol. 19	6 00
Dec. 9—Books of J. B. Lippincott. See Accession Book No. 37116	166 08
Dec. 15—Vol. 1 Barker's Nervous System. Vol. 1 Bryant's Op. Surgery D. Appleton & Co	11 00
1900—Jan. 24—Subscription to "Lancet"	8 00
Feb. 5—Sub. Journal Suggestive Therapeutics	3 00
Feb. 6—Books Lea Brothers	26 00
Mch. 2—Sajous An. & Analyt. Ency. Prac. Med. Vol. 5 ½	6 00
Total expended	$543 12
Balance in Treasury	$3.390 86

ANNIE L. DIGGS, *State Librarian.*

The Secretary called attention to the present meager and unsatisfactory condition of the constitution upon the subject of membership, and on his motion the proposed amendment now pending was taken from the table. On motion, duly carried, said amendment was adopted. It is in the following words:

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ARTICLE III.—MEMBERS.

Section 1. The permanent members shall consist of those who are members of this Society at the time of the adoption of this constitution, and who shall continue to conform to the by-laws, and have maintained their membership as provided by the by-laws.

Physicans who are graduates of reputable medical colleges, and who are regular practitioners of medicine in Kansas, and who shall be recommended by two members in good standing of this Society, may become members by application.

The following application shall be filled in and signed by the applicant, and signed by two members of the Society in good standing, and accompanied by the membership fee and one year's dues.

Form of Application.

(Date).....

I hereby make application for membership in the Kansas Medical Society, and enclose herewith five dollars, for membership fee (three dollars) and one years dues (two dollars). I am a graduate of.....of the year ....., and a regular practitioner in the State of Kansas; and I hereby subscribe to the rules and regulations of the Kansas Medical Society, and agree to abide by the same.

Name.....

Address.....

Recommended by.....

.....

We have examined the credentials of....., and recommend him for membership in the Kansas Medical Society.

....

....

....

Board of Censors.

The application shall be referred to the Board of Censors who shall attest the same, after which it may be acted upon by the Society.

The Committee on Necrology submitted the following report on the death of three members of the Society.

Dr. L. J. Cunkle.—On the 22d day of Feburary, 1844, near Carlisle, Cumberland County, Pa., Levi Cunkle was born, and on November 16, 1899, was found dead on a sleeper, which apparently in his usual health he had boarded the night before at Kansas City, Mo., for his home at Madison, Kansas. These two dates mark the beginning and visible ending of an active career; a life replete with good deeds, high aspirations and difficulties overcome, but not wholly void of disappointment.

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He spent his boyhood days on a farm at the place of birth attending school at Graysonville and Gettysburg, in his native State, and at Hagerstown, Md. His first course in medicine was in Philadelphia, whence he went to Bellevue, where he graduated.

He practiced his chosen profession for a few years in North Clayton, Ohio, where he was married to Miss Nancy Ann Cable.

In the year 1870 he came to Madison, Kansas, where he continued a successful practice until his death. His wife, a daughter and a son survive him.

During his thirty-years residence at Madison, no movement for the betterment and upbuilding of his town and surrounding country was complete without the name and influence of L. J. Cunkle. He was a man of strong character, always a student and a lover of good books; local surgeon for all the railroads coming to his town, a member of the A. O. U. W. and of the Masonic Fraternity, in which he attained the Scottish Rites degree.

His taking off, coming as it did without warning and in the full glow of usefulness, was a great shock to the community in which he had labored so long, and left a vacancy that will be long in filling.

Dr. Silas E. Sheldon, of Topeka, Kansas, died April 19 and was buried in Cleveland, Ohio, on April 23. Dr. Sheldon was born in Grafton, Ohio, in 1833. In 1860 he obtained his medical degree from the Medical Department of Western Reserve University. He served through the Civil war as surgeon and subsequently took up his residence in Topeka. In 1867 he married Miss Ann Eliza Ball of Cleveland, Ohio. He lived a very prominent life in Topeka and was widely and favorably known among his profession. He was professor of Gynecology in the Kansas Medical College, Medical Director of the Kansas Mutual Life Insurance Company, a member of the American Medical Association, the Kansas Medical Society, the Eastern Kansas Medical Society and the Topeka Academy of Medicine. Dr. Sheldon was an active member of this Society and had made himself prominent by his persistent efforts in behalf of medical progress. He was a man of excellent judgment and superior skill, and had gained for himself an enviable reputation as a physician, a surgeon, and a teacher. He was a thirty-third degree Mason.

Dr. J. B. Pierce: Jonathan B. Pierce was born near Pottsdam, St. Lawrence county, N. Y., November 5, 1842. When he was a boy of ten years the family moved to Blissfield, Michigan, and later to Adrian and Bronson in that State. In these several

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towns he obtained a fair English education and as he grew to manhood learned the trade of carpenter and builder. Later he moved to Manston, Wis., and engaged in the cabinet business. Here he took up the study of medicine and entered the Medical Department of the University of Michigan in 1871, graduating later at St. Louis.

In the year 1872 he moved to Eureka, Kans., where he soon secured and ever after maintained, while able to work, a practice that extended over a broad and arduous field. Though not a classical scholar, he possessed that ready sympathy and almost intuitive insight into human suffering that enabled him to grasp readily the essentials of disease, and to gain the lasting confidence of his patrons.

He was local surgeon to the Santa Fe and Mo. P. railways, and a member of the Masonic and M. W. A. fraternities, and the G. A. R., having served in the commissary department during the Civil war.

February, 1864, he was married to Miss Nellie Hunt, by whom he had two sons, J. Rollin, and Earl W., now in business in St. Louis. His first wife having died he married Miss Ida May Fuller, July, 1878. She is still living. He died May 5, 1890, mourned by a great host of devoted friends.

J. DILLON, M.D., *Chairman.*

The Board of Censors reported favorably upon the applications of the following named gentlemen for membership in the Society: W. F. Howard, Cuba, Kas.; W. S. Grisell, Ransom, Kas.; J. B. Brickell, Americus, Kas.; R. H. Meade, Great Bend, Kas.; S. H. Thompson, Kansas City, Kas.; F. H. Martin, Topeka, Kas.; Charles Hammond, Topeka Kas.; Fred C. Hall, Jr., Cuba, Kas; H. O. Hardesty, Narka, Kas.; O. A. Taylor, Topeka Kas.; J. Albert Berry, Topeka, Kas.; R. M. Moore, Olathe, Kas.; J. F. Pickerel, Beverly, Kas.; J. J. Stephen, Soldier, Kas.; H. W. Manning, Eureka, Kas.; H. H. Keith, Topeka, Kas.; G. W. Jones, Lawrence, Kas.; Edward G. Davis, Kansas City, Kas.; T. E. Welch, Emporia, Kas.; W. D. Groff, Nortonville, Kas.; Arthur E. Allen, Utica, Kas.

On motion, the Secretary was directed to cast the vote of the Society for the applicants, and they were declared duly elected to membership in the Society.

No motion of Dr. D. F. Longenecker, Dr. J. E. Moses was elected an honorary member of the Society.

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Dr. Schenck, chairman of the committee appointed to consider that portion of the President's address relating to proprietary ready-made compounds, presented the following report, which was on motion unanimously adopted:

To the President and Members of the Kansas Medical Society: Your committee to whom was referred that portion of the President's address referring to proprietary drugs and formula, beg leave to report, that they find their production and advertisement a steady growing evil, and often an insult to the medical profession, appealing to it as the nostrum vendor appeals to the general public.

They believe it harmful to physicians, druggists and the sick, tempting the physicians to use medicines whose virtues or lack of virtues we may not know, and formulas not accurately adapted to the case under his care, tempting the druggist to prescribe drugs recommended to cure sundry diseases, and injurious to the sick by the prescription of formulas whose several elements are not accurately adapted to existing pathologic expressions, and druggists to prescribe without knowledge of either pathology or etiology. We recommend the adoption of the following resolution:

Resolved, That the Kansas Medical Society recommends its members to avoid the use of proprietary medicines and fixed formulas, and to make their own formulas, adapting the quantity of each ingredient to the pathologic condition of each and every case.

W. L. SCHENCK,
B. D. EASTMAN,
W. F. SAWHILL.

AFTERNOON SESSION—FRIDAY MAY 4, 1900.

The Nominating Committee reported the following nominations of officers for the ensuing year. On motion, the report was adopted, and the several gentlemen were declared duly elected to the respective offices.

President—Dr. J. W. Porter, of Pittsburg.
First Vice-President—Dr. J. P. Lewis, of Topeka.
Second Vice-President—Dr. C. P. Shaffer, of Morrill.
Corresponding Secretary—Dr. J. W. May, of Kansas City.
Treasurer—Dr. L. H. Munn, of Topeka.
Librarian—Dr. S. G. Stewart, of Topeka.
Judicial Council—Dr. Geo. Boyle, of Louisburg.

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On motion of Dr. J. W. Porter, that part of the amendments to the constitution proposed at the last session of the Society touching the place of meeting, was taken from the table. The resolution was introduced by Dr. J. A. Lane and was to amend section 1 of Article 5. The section amended reads as follows:

"Art. 5, sec. 1. One regular meeting shall be held each year at a place to be chosen by a majority of those members present. Special meetings may be held as provided by the by-laws."

On motion, the amendment was adopted.

The Society proceeded to select a place for the meeting in 1901.

Dr. Mead nominated Topeka. Dr. Porter moved to substitute Pittsburg for Topeka. A vote being had on the substitute, it was declared carried, and Pittsburg was declared to be the place at which the next annual meeting shall be held.

Dr. Jones, a member of the Douglas County Society, and of this Society, presented and read the following memorial, which on his motion was adopted by the Society:

At the branch meeting of the Douglas County Medical Society, an organization made up of the regular accredited practitioners of the three schools of medicine, the undersigned committee was appointed to draft and present a memorial to the several State medical societies with regard to making improvements in the existing State laws dealing with the adulteration of foods and medicines.

In the opinion of this committee, the laws now in force are explicit and the penalties sufficient; but these laws are rendered inoperative by there being no provisions made for officially detecting frauds, and because the people at large are ignorant of such laws, which are framed in their (the people's) own interest.

Therefore, the committee believes it desirable for the three State medical societies to make a concerted movement in the direction of influencing legislation in the interest of pure foods and medicines, and that in order to insure the community a larger degree of protection from injurious adulterations, to detect frauds and bring the offenders to justice, the State University and the State Agricultural College be constituted official stations where the proper departments be required to make all necessary chemical, pharmaceutical, microscopical and bacteriological examinations of suspected articles and supply reports of the results to those requiring them.

Those two stations could be made self-supporting by charging a fee for each investigation when the one asking it is a private

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party or corporation and personally interested; such fees being assessed equitably by the examiner and the funds going to the support of the department.

If the various State institutions, prisons, asylums, alms-houses and the like had the benefit of the work of such stations gratis, it seems very probable that a considerable sum would be saved to the State annually—at all events, there would be no outgo.

Respectfully submitted,
G. W. JONES, M.D.
EDWARD BUMGARDNER, M.D.
A. W. CLARK, M.D.

Mr. President: I move that a committee of two be appointed by the chair, which committee will meet with a similar committee or committees appointed by one or both of the Societies, who will together form a joint committee instructed to form a law on the lines indicated, and who will present the same in a proper form to the Legislature and do all in its power to have the bill considered and passed. Motion carried.

The President appointed as the Committee called for by the memorial, Drs. Jones and Ochiltree.

Dr. Lindsay offered the following resolution, which was unanimously adopted:

Resolved, That the State Medical Association now in session at Topeka, May 4, 1900, heartily commends the action of the Council of Topeka in prohibiting public exhibitions of hypnotism.

The President announced the election of secretaries of sections as follows:

Surgery—Dr. P. D. Hughes, Kansas City, Kansas.
General Medicine—Dr. J. M. Latta, Millerton.
Gynecology—Dr. Maggie L. McCrea, Winchester.
Ophthalmology and Laryngology—Dr. A. C. Graves, Pittsburg.

The President also announced the following appointments by the President-elect:

Board of Censors—Drs. J. E. Sawtell, Kansas City, E. F. Green, Olathe; A. B. Peters, Mankato; Wm. Martin, Wellington; and C. E. McCarthy, Dodge City.

Committee on Necrology—Drs. Geo. A. Boyle, Louisburg; D. L. Wood, Dighton; and C. W. Rairdon, Havensville.

Committee on Programme—Drs. Magee, Topeka; Mead, Oberlin; and Axtell, Newton.

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Comittee on Arrangements—Drs. Wm. Williams, A. C. Graves, H. Z. Gill, Hazelwood, and H. H. Bogle.

The president in a few chosen words, thanked the Society for the courtesy which he had enjoyed as presiding officer, and introduced President-elect Porter who spoke briefly.

A vote of thanks was tendered to the President for the able, impartial and courteous manner in which he had presided over the deliberations of the Society, and to the committee on programme for the excellent programme.

On motion, the Society adjourned *sine die.*

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PAPERS READ AND DISCUSSIONS.

Doctor H. A. Warner read the following paper on "The Relation of the Medical Examiner for Life Insurance to the Company."

We usually give heed to those things to which we attach importance; we attach importance to those things of which we know much or little, as we believe they may or will affect our personal interests.

The magnitude of a business many times arrests our attention and causes us to investigate it to an extent that we become interested.

The growth of the business of life insurance has placed it in the front rank of the business interests of this country, with more than two hundred companies, associations and societies engaged in the business; with three million of policyholders, with ten million beneficiaries looking to them for future benefits; receiving from the policyholders annnally many million of dollars; holding in reserve and trust to meet future liabilities hundreds of millions of dollars; looking at the business from the dollar and cent view-point, our attention should at once be arrested, our interest aroused to an extent that we should be led to inquire, What is my relation to this great business as the medical examiner of one of the great financial institutions?

The relation of the medical examiner for life insurance to the company, is a many sided one owing to the fact that in each individual application there are several interested persons, and right between these several interests stands the medical examiner.

The agent or solicitor is the first person in the proposition. Whether he is working on a salary or commission it becomes him to secure business for the company that his relations with them may be continued and his compensation increased if possible. The worthy life insurance solicitor should stand well in his field of work, only according to the minister and the physician a place in advance of his. To the minister who points to us the better way and endeavors to lead us that ours shall be a better life here and in the future, should we accord the first place in life. To the faithful, devoted, honest, intelligent physician, to him who stands between us and death many times, to him who hearkens

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to our first cry, who listens to our latest sigh, should the second place be given.

The solicitor for life insurance should be next in the list, if he be worthy of his calling. While he deals with financial matters they are important to those in whom we are interested. Through his solicitation men are induced to make provision for those dependent upon them when they can no longer provide for them.

One of the most unselfish things that men do is the procuring of life insurance, placing beyond their control a sum of money at stated periods which cannot be of benefit to them, but is solely for the benefit of others.

The solicitor and the applicant are the first two factors in the business. The rules of the companies and the laws of the State make the medical examiner a necessity, there being no doing without him. What should be his relation to the company, association, or society? The correct answer to this question is one of vital importance to the company, when dollars and cents, (even odd cents and fractional parts of them) enter into the computations of the actuary.

The relation of the medical examiner should at once and for all times be confidential both in justice to himself, the applicant, and the company. Confidential to a degree that no wrong or injustice should at the present or in the future be done either party. Without this confidential relation those things which cannot escape the eye of the observing medical examiner which are not found in the formal list of questions of the blank will not reach the ear of the medical director; and it is just these little things which come to you and you can hardly put them into words which enables you to make up your final decision as to the class and quality of the risk from an insurance point of view.

Medical directors for years have tried to formulate blanks which will cover the entire field and have failed. There is that in the face, in the eye, in the movement of the man as he enters your office, the way he sits in the chair, which impresses you with the idea that he ought to be or ought not to be accepted by the company. If your relations to the company are as confidental as they should be, if your interest is in the success of the company and its popularity which comes with success and the interest of each individual policyholder, then everything which marks against the applicant will be most carefully noted and will reach the desk of the medical director.

The relation of the medical examiner should be that of a trust-

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ed employé, and one in whom perfect confidence is reposed, regarding himself at all times as in the employ of the company or society. A false idea is often entertained by the medical examiner for fraternals that he is employed by the applicant, owing to custom of having the applicant pay for the examination; this is erroneous. The applicant pays for the medical examination just the same in old line work, only the money is transmitted to the company and in time to the examiner by the company.

When it is taken into consideration that in the event of an early death, which might have been foreseen by a careful medical examiner, and that the receipts by the company or society was a few dollars, while it required thousands of dollars to meet the obligation thus incurred, then we can begin to realize the importance of careful medical selection. This question is becoming more and more important to the life insurance associations each year as the business grows in popularity with the public, or as the number increases who have been declined by some association. These persons, after several failures to secure insurance, begin to scheme to obtain a policy somewhere at any hazzard.

In the future will come a better understanding between the associations and the medical examiner. The importance of these relations demand it. Investigations are now being made which will lead to definite action on the part of the insurance organizations.

The medical examiner who has been found to be unreliable and untrustworthy will lose his place, not only for one organization but for all for whom he has been making examinations. Much of this information will of necessity come from the fraternals where a very large number of examinations are made by one examiner. In support of this the citing of two cases may assist us to arrive at a conclusion. Ninety-four applicants are presented to one medical examiner; five are turned aside and their examinations are not completed because some form of heart disease is discovered; of the eighty-nine examined eighty-three are accepted four of whom die within a year of heart disease, while the five who were turned aside were all living at the beginning of the next year.

Eight hundred ninety-six applicants were presented to another examiner, of which eight hundred ninty-two were accepted, only one of whom had died at the end of the eighteenth month, and that one the result of an accident.

The statement is often made that the relations to one company

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or organization cannot be expected to be the same, because the compensation is not the same. The relation should be just the same or the position ought not to be accepted. Your stethoscope or thermometer is not aware of the amount of your fee for the individual examination. You should record the facts as revealed to you by them, regardless of the fee; if you cannot do this, then decline the appointment.

The time is certainly not far distant when examiners for life insurance will be known and recognized as specialists are now in other lines. When two or three men in a city like Topeka will make all the examinations for all the companies or societies, just as surgical cases are now sent to the surgeon, and diseases of the eye are directed to the occulist. When this time comes, fees will be commensurate with the work performed and the service rendered; but the service must be rendered and the ability proven before the fees will be advanced.

People nor corporations do not pay fees because you are going to be a surgeon or an occulist, *but because you are one now.* Thus it will be with life insurance organizations—the fees will be paid because you are a competent, reliable examiner. The question of fees of the future rests entirely with you, ladies and gentlemen of the profession.

DISCUSSION.

Dr. Sawtell: I was very much interested in the paper. It covered in considerable detail the relations of the examiner to the insurance company. The Doctor certainly outlined well the duties of the examiner to the company, and I don't know that there is anything that I can add to the discussion unless it might be in the way of incidents in my experience in this line of work. The Doctor's idea of this being a special line of work is correct. Very few of us in general practice who make examination for life insurance as local examiners, study the features of the policies which are issued by the companies. We learn to make diagnoses and prognoses of disease, but we give little attention to the effects of disease upon longevity. When we attempt the duties of supervising examiners for life insurance, we look at these matters from a different standpoint than we do as lodge examiners. We study these things that have an effect upon longevity. It is the duty of the supervising examiner to classify the risks and to throw out those which will not reach the expectancy. I think there is no department of the medical science which is given so little attention as that of life insurance, but we have

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evidence that a greater interest in the subject is being aroused. It is getting to be popular in the medical colleges of the country to have a chair on life insurance, and it is a very important matter. If we could get the medical examiners to do the work that is outlined before them it would be of great advantage to applicants and to the insurance companies. It is a difficult matter to get examiners to fill out the blanks as they are sent to them. They think they are gotten up by cranks and that they have no bearing upon the expectancy of life, but they do not take into consideration that at this day all the information called for by the printed blanks are of great value in the preparation and preservation of mortuary statistics which are of great value to the insurance world. There is a good deal along that line that the Doctor could have brought out in this paper, but it is nevertheless a very interesting paper, and I wish that more could have been here to hear it.

Dr. Minney: The paper certainly was a good one. There is this criticism of life insurance companies and particularly fraternal orders, which I have to make: The Doctor alluded to it, but did not bear quite heavily enough upon it—they do not pay enough. It will not do to say that you ought to do this, and he ought to do that, and we ought to do the other thing, for love and humanity and all that kind of thing; I don't wish to speak disrespectfully, but there are very few of us who do as good work for a dollar when we feel that it is worth fifty dollars, and that the applicant is able to pay that sum. It is humanity to do the work for little or nothing, if necessary, but if more were paid there would be better service rendered. About twelve years ago I had an Irish friend come to me with a sore eye which I took out. In a few weeks or months he returned, and I said to him, "You are going to lose that other eye." I saw no more of him until about eight years afterwards when he was led into the office blind. He came to to get a statement that he was blind. I said, "There is no question about that, anybody can see that you are blind; what do you want the statement for?" He says, "I am insured. You remember you told me whon you took my eye out that I would go blind altogether." I studied a moment and recalled that I had told him that and he went off and had his life insured right away. Well, the company—I would hate to say it was Doctor Warner's, but it was—paid him for his disability. He is at work today, and the company is out the five thousand dollars, or whatever it may be. Now, there was no occasion for the company to lose that money, but I am very glad that Pat got it.

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Doctor Latta: There is another phase of this matter which has not been touched upon. It is a fact that some of these companies do not themselves want a thorough examination. Not long ago there was a Massachusetts company came into my neighborhood with a big flourish of trumpets and with plausible claims about its strength being equal to that of Gibraltar, which worked up quite an excitement in life insurance. I was examiner for the company. Several cases came to me which I regarded as somewhat suspicious on account of lung and heart diseases. Some of them were ladies and I requested the privilege of making a physical examination of the thorax, which was refused; I then declined to make any report. The solicitor wrote to the chief examiner of the company stating the facts, and asking to have another physician appointed; another physician was appointed and he passed those applicants without an examination at all, and they were accepted by the company. So I find from experience that sometimes a man may be a little too thorough in his work to suit the company itself.

Dr. Leslie: Just one word along that line. There was a solicitor for one of the new orders came to our town last year and wanted to have examinations made for seventy-five cents. He asked me to make examinations for him, and I said the price was too small; that a dollar certainly was little enough. He said: "You will not be required to make an examination of the urine." I told him that any company that did not require that was not reliable. So he went to another physician and appointed him as examiner. I know of two or three other orders that have done the same thing. While we are on that subject, I want to say that of course a doctor cannot make a thorough examination of the urine even for a dollar. I think, as Doctor Minney said, the price should be more, certainly it should never be less than a dollar; and that, in most cases, is too small.

Dr. W. E. McVey: I do not like Dr. Warner's position. He says that the doctor who receives his pay for the examination from the applicant is under as much obligation to the society as if he received it from the society. That is true to a certain extent. He also said that the applicant for insurance in a fraternal society did not pay for the examination any more than he did in the old line company. The fact is, that the old line companies pay the examiners themselves. They probably charge more for the insurance to cover the cost of the examination, but if no policy is issued, no charge is made; so the company is responsible to the

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physician for his compensation. In the fraternal orders the applicant pays the examiner, no matter whether he is accepted or rejected. It seems to me under those circumstances, if the examiner is paid by the applicant, then at least a part of his duty lies with the applicant. There must be a division. He is under some obligation to the man that pays him for the service. He is under fraternal bonds to the organization to which he belongs and his duty, of course, lies with them; but he is undoubtedly under some obligation to the applicant who pays him for his work. The applicant is certainly entitled to know the reason for being rejected. Now, as the Doctor suggests, there are a great many things contained in the application blanks in regard to the risk, the expectancy, etc., which ought to be filled out entirely in order that the company may have a fair idea of the applicant; but it is unfortunate that the companies, both the fraternal orders and the old line companies, have not sufficient confidence in their medical examiners to accept their opinions. He says that they should express their opinions freely. Sometimes they do, and if the opinion happens to be opposed to the acceptance of the candidate, it is all right, it is accepted. But, on the other hand, if there is some point against the candidate according to the rules of the company, but in his judgment, from the general examination, he believes that the applicant is a good risk, the company rejects him just the same. His judgment is good in the one case, but in the other it is not worth anything.

Dr. Mead: It does not seem to me that examinations for insurance in the fraternal orders ought to be compared with old line examinations. In the first place there are local influences surrounding the physician who examines for fraternal companies that do not exist with the old line companies. In the first place the different societies are striving to see which can excel the other; they are ardent competitors; they are zealous to increase their membership, and by their zeal they throw about the physician certain personal influences which he cannot get rid of, but from which the examiner of the old line company is free. How many confidential letters does the medical examiner of the fraternal society get from physicians? Now, I might say that one of the main reasons is that they do not pay enough. The old line companies are satisfied with their medical examiners because they pay them for their time and get good service; every physician who accepts a place with an old line company is con-

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scientious of his statements, and I say that until the fraternal societies raise their fees, until their methods are different, they cannot expect to succeed and have their examinations as perfect pen pictures of individuals as the old line companies now receive.

Dr. Warner closed the discussion: I am very much pleased with the remarks that have been made in regard to this subject, and particularly well pleased with the suggestions of Doctor McVey in regard to returning their fee in case of rejection of the applicant. As far as my own society is concerned, that will be corrected at the June meeting. The charge ought not to lie against any organization that the medical examiner is biased as the result of relations to the society. The medical examiner ought to do justice to himself, to the society, and to the applicant. The difference between the fraternals and the old line companies is not so great as might be imagined. You do not know any difference in your community when some one dies, about the demand for the payment of the certificates; when that time comes you will make your calls both upon the old line companies and the fraternals, and you will get just as good a $1,000, $2,000 or $5,000 from the fraternal society as you will from the old line company, and you will sue them if they do not pay you. The facts are that there are less lawsuits, less contentions, less disputes about the payment of claims on the part of the fraternals than on the part of the old line companies. My own association has paid out nearly a million dollars in the past eight years. The Kansas Mutual Life has paid out a good many hundred thousand dollars and our money was just as good as theirs. There was no difference in that respect, and there ought not to be in other respects. In regard to a solicitor who turns you down because you are too rigid in your examinations: The solicitor is not the company and if he does a thing of that sort without the knowledge of the company he ought to be reported to the company. If the company is itself a party to the fraud, it ought to be reported to the insurance department and turned out of the State. It is not worthy of the patronage of the citizens of any State.

Now in regard to the Doctor's remarks about local influence—The local influences in a community, taking away the immediate reference which has been made by Doctor McVey, do not amount to anything; they are not greater than they are with the old line people. The solicitor calls on me and secures my application. How does the old line company know anything about that? By what possible means can any influence be exerted unfriendly

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either to the company or to the applicant? The fact is that the solicitor and the applicant are the only people who know anything about it. But I regret to say it has become quite a practice for people who want life insurance to pay their solicitor on the side, the doctor on the side. We have paid some six thousand dollars in losses where the doctor received one hundred dollars for making the examination, and we have solicitors who have been offered anywhere from $5 to $50 to insure the applicant getting into the company. What we need is reliable medical examiners and when we get away from this nimby-namby way of doing business—this craze for business, this clamor to get everybody in—this clamor in which both the fraternals and the old companies join—the only difference being that one is a clamor for members and the other a clamor for money—I say when we get away from that, when we have the courage to say that Jones is not a reliable examiner and that Smith is a reliable examiner, and then pay Smith a reasonable compensation for his services, when all the companies doing business in the town have one or at most a few men in their service—one in the smaller places and two or three in the places like Topeka—and have that one man or those two or three men make all the examinations, then we get such service as specialists give in their several lines and that is what we must come to.

Statistics are now being tabulated by various companies upon the subject of medical examiners, and when we get our reports completed and get them together we shall know who is a good examiner and who is not. I received a letter some days since from an examiner criticising the action which was taken by my society upon an application sent in by him. Turning to the cash account I found that that individual organization from which the application came, has remitted seven thousand dollars, and as the result of the examiner's examinations the company has paid out at that individual point twenty thousand dollars. He was very promptly told that he was not a very reliable examiner and his opinion did not go very far with the officers of the society. Now, if some other company he is examining for knew what we know regarding his examinations he ought not and probably would not be examiner for that company or for any other. Why? Because he is not reliable; he simply passes everybody. That ought not to be the case.

There ought to be a movement along the line of the profession everywhere for better fees for medical examinations. It is

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worth money to have good examinations made and it is a serious loss to have poor ones made. I trust the members of this medical society will bring about a condition which will make it impossible to have examinations made for one dollar; that the pressure will be so great that no examination can be had for a dollar; but that two, or three, or five dollars will be paid for the work. That is what we want and it ought to be the aim of every member of this Society to promote a reform in this direction.

Dr. E. T. Shelly, of Atchison, Kas., read the following paper on "Cretinism":

A very succinct definition of Cretinism is that given by Osler, who describes it as "A chronic affection, characterized by disturbance of the growth of the skeleton and soft parts, a remarkable retardation of development, an extraordinary disproportion between the different parts of the body and a retention of the infantile state, with a corresponding lack of mental progress."

Two forms of cretinism have been described—the endemic and the sporadic—and the description just given applies equally well to either form. The endemic form probably does not exist in this country, but is found in a few localities in Europe and Asia. The difference in the appearance and character between the two forms consists in little else than that a fibroid or cystic enlargement of the thyroid gland is usually present in the endemic form; while in the sporadic, the gland is generally absent or greatly atrophied. The endemic form was described as early as the sixteenth century, but the sporadic was first clearly distinguished by Fagge in 1871.

Very little is known of the etiology of this disease (or collection of symptoms). Its appearance has been variously ascribed by different authors to drinking-water; to hereditary tendencies, with bad hygienic surroundings, to inter-marriage, to parental alcoholism, etc. Cretinism (which may also be called congenital myxedema or athyrea) is, like myxedema, due to the absence or disease of the thyroid gland; the severity of the affection probably depending upon the extent of destruction of the secreting portions of the gland.

The experimental physiologist, the surgeon and the physician, have each contributed to the knowledge which we possess of this disorder. Experimental physiology has demonstrated that whatever the nature of the secretion of the thyroid may be, develop-

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ment, mental and physical, is very greatly dependent upon it in all animal organisms. Surgery has shown that whenever all of the secreting portion of this gland is removed for any purpose whatever, the condition known as strumipriva cachexia—operative myxedema—invariably appears. Clinical medicine, profiting by what experimental physiology and surgery have proved, has learned that the deleterious effects of athyrea can, to a great extent, be overcome or averted by the administration of proper preparations of the missing gland, this discovery being one of the most brilliant therapeutic achievements of the century.

Horsley and others have found that any organism deprived of its thyroid gland invariably accumulates mucin in the blood. In a preliminary report of some experiments recently made by Dr. J. Levin, of New York, he claims to have proved that mucin anemia is at least *a* cause, if not *the* cause, of the strumipriva cachexia. If this be true, a very important discovery in the pathology of cretinism and myxedema has been made. Where the thyroid gland is enlarged, as it rarely is in cretinism or in myxedema, chronic thyroiditis is present with infiltration of the vessels of the gland with embryonic tissue.

The symptoms of cretinism become apparent within six months to five years after birth, and are pitiably repulsive. The head is usually disproportionately large and misshapen, and scantily covered with coarse hair; the forehead low; the eyes, small and buried, apparently, in œdematous surroundings; the nose flat and broad, with dilated nostrils; the lips, thick; the tongue, lolling, with dribbling saliva; the teeth, poor or absent; the ears, more or less deformed; the neck, short and thick; the countenance expressionless; the complexion, very pale and waxy, or yellowish green; the skin, dry; the muscles, soft and flabby; the limbs often crooked and the ends of the long bones enlarged; the abdomen, protruding, and often accompanied by lordosis of the spine; the speech, retarded or not at all developed; the voice, coarse; the hands and feet, cold; the temperature, often subnormal; bodily movements, slow, and the patient inclined to sit for hours without protest, and apparently oblivious of his surroundings. But text-books and medical journals are rapidly making this picture familiar by illustration and description.

The diagnosis in a well developed case should not be difficult, although it might rarely be mistaken for hydrocephalus, or Mongolism, a form of imbecility characterized by an appearance of the face similar to the Chinese. The therapeutic test—the ad-

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ministration of thyroid extract—however, soon settles the diagnosis.

The prognosis in cretinism is fortunately quite favorable. Perfect recovery from this trouble has so far seldom occurred, but wonderful improvement, if not a perfect cure, may be confidently looked for from treatment. Drug treatment is practically ineffective but the administration of a glycerine extract of the thyroid gland of a sheep, or the dried and powdered gland, is followed by surprisingly happy results.

Probably a safe initial dose of the dried extract is one-half to one grain, given three times daily, and gradually increased to the point of tolerance, indicated by increase in temperature, rapid pulse, restlessness, dyspnœa, irritation of skin, insomnia, digestive disturbances, or muscular twitchings. Great tolerance of the extract is sometimes developed in these cases, but immediately upon the appearance of toxic symptoms the dose should be lessened.

Transplantation of the fresh thyroid gland of a sheep has been tried, but so far without satisfactory results, because the gland, even when succesfully transplanted, usually absorbs within a few months, and the benefits of the operation are lost.

A very rapid growth in height is sometimes observed during the administration of this remedy, so rapid even as to lead to deformity of the long bones. When this rapid growth occurs, the child should not be allowed to run a great deal. Recurrence of symptoms usually takes place if the use of the thyroid is omitted and it is therefore necessary, after a cure has been effected, to continue the use of this remedy through life. It is thought that about one dose a week is sufficient to prevent the patient from retrograding.

Report of a Case.—Rose D., a female cretin, is the second child of perfectly healthy American parents, who were each about 25 years of age. She was born August 19, 1891, in Atchison county, Kansas. The first child, a boy, was born in May, 1889, and, if anything, is above the average in mental and physical alertness. Nothing occurred during the cretin gestation except that it is said to have extended over ten months. The labor was normal, the child weighed about nine pounds, and was perfect in appearance. The mother said that the child's eyes had always seemed somewhat peculiar, but nothing else unusual was noticed in her appearance until she became six or eight months old, when development seemed to stop, or become very

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much retarded. The character of the disease was first recognized in July, 1895, when she was 4 years of age, and treatment was begun with ½ grain doses of Parke, Davis & Co.'s dessicated thyroid. At this time she weighed 23 pounds, was 29¾ inches in length, and the mother thought the child had not changed in form, length, weight, expression, actions or mentality for at least three years. Her skin was pale and edematous looking, but did not pit upon pressure; the anterior fontanelle remained open; the skull was very misshapen; her face was lop-sided; the right side being apparently in advance of the left and a little larger: the abdomen protruded markedly, and lordosis of the spine was present. She had a peculiarly sleepy, expressionless countenance, and winked a great deal, but the eye lids moved very slowly even when the eyes were threatened with injury. She ate any food on the table, but could not feed herself. She would creep by using only the elbows as propellers and drag along the lower limbs, but could raise herself to her feet at a chair and move around it slowly. Her vocabulary consisted only of the words "mamma" and "papa." Constipation was chronic with her, and in the spring of the year, during which treatment was begun, she had, on several occasions a prolapse of the rectum. She would sit on a high-chair for several hours at a time with the same plaything, slowly examining it, and would display no desire to leave the chair, except upon the approach of her mother. Her hair was rather scanty, but of ordinary texture. All her movements, voluntary and involuntary, were very slow, and she never moved in her sleep. She had 16 teeth, teething having begun at 10 months and no teething troubles had ever occurred. She had measles when about 14 months old; soon thereafter, whooping cough, and in April, 1896, had a very severe attack of pneumonia.

In six months after treatment began, she had learned to walk across the room and back, and the irregularities in her head and face were becoming less marked. Her weight was not taken, but she had grown 3½ inches in length. After three years treatment, her length had increased 9½ inches; her weight 48 lbs. At present she takes about 2 grains of the dried gland once daily.

Her condition has wonderfully improved during these five years. A great help, however, to her mental and physical development has been a particularly bright and active little brother, who was born three months after she began taking thyroid. When he began to run around and talk, she made very great efforts to do and say everything he did and said, and the result was

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that she too learned to talk very well, and is as playful as any child of her age—minus the cretinic hiatus of 3 or 4 years in her career. Of course, she is not so sprightly in her speech or actions as her younger brother, nor is her memory so good; and though the time may never come when she will be very quick mentally or physically, she has ceased to be the helpless, pitiable, infantile imbecile she was at 4 years of age, and promises, when she grows up, not only to be able to care for herself, but to make herself useful to others.

Dr. Deborah K. Longshore, of Topeka, read the following paper on "Physical Culture":

Many persons in our several States, perhaps in our whole Nation, have become interested in psychological influences over mind and matter. This may have been the case for many centuries, but the last two decades, and particularly this *fin de siecle* decade, has been marked with sentiments in the minds of men and women, that we have no bodies—that they are a myth, and the mind the identity.

One lady, who has been out of this country for seven years, said to me this winter, "What is the matter with our United States people? They act daft. Why did God make us these wonderful houses of clay, if we are to be made to believe that they are nonentities?"

Marching along with the strides of mental science is a fad for physical culture; not as overwrought as the mental activity, yet it shows the same mistakes. Not saying that hypnotism, or Christian science is noninfluential, we will grant those who *wish* an opportunity to pursue them, and spend a few minutes ourselves on physical culture.

When a medical student has spent two winters on anatomy, physiology and chemistry, he concludes that we are of the earth earthy. Energy is dependent upon life; life upon health; motion upon muscle; the erect position upon bone and muscle; endurance and ability upon cultivation of bodily and mental forces.

Last summer I spent a month in a Rocky Mountain sanitarium. Among the many attractions of climate, water, heat and altitude, was a young lady from Chicago, who instructed the inmates, men, women and children, in voice culture, dramatic attitudes, and physical culture in general. The most attentive pupils under her care were really sick persons, or those who had

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come there for treatment in an exceedingly debilitated condition. They had become convinced that to heal their lungs and increase their power of digestion and assimilation, the chest and abdominal cavities must be made more capacious, and the circulation of blood increased. The women seemed to be more persevering, and had gained greater results than the men. Perhaps their appreciation of the detail was greater, or their belief that nature needed all the help they could give in the reparative process was more acute. At any rate, such was the case as I observed. The men were stooped and quiet, while the women were erect and more lively, though more homesick mortals I never saw. Nature in earth or air had no charms. They were staying for a purpose, and bravely biding their time, wearing short dress skirts and stout boots, with a strong walking stick, they were seen on the hill sides every day, and two and three times a week at the bath-house for bathing and massage. They said their skins were clean, but their skirts were soiled from rambling. Some of them had slept out of doors on balconies for so many months that they said their rooms were stuffy, even with the temperature at zero, and much more so when the thermometer stood at 70 or 80, and it never ran above.

The doctor advised and approved of all these adjuncts to his medicinal methods of repair. They were certainly valuable adjuncts, together with the chosen, but liberal diet and rest. Enfeebled and feverish cases were sent to bed, and strongly advised to remain there for days, until their excited systems were quieted. Then again judicious exercise was maintained for a reasonable length of time. A wise and cheerful air of confidence seemed ever present. To make the best of existing circumstances of health and environments, and forget if possible the pains that flesh is heir to, is the best road to health; not to ignore this mortal house of clay, but strive to make it more habitable.

Real fun was there for those whose morbid conditions did not overshadow all else, and beautiful Sabbath services to suggest to us that this mortal mind might some time need an immortal habitation.

Last winter I donned a bifurcated suit, and entered a class of ladies younger than myself, who could vault poles and swing clubs, and march in a military drill until the drill mistress clapped her hands and said that is a good, straight line. Some gained muscle and weight, others spirits and strength. I was delighted with the loss of a few pounds. Their weights and measurements

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were carefully noted by the drill master, and at the end of the year we expect some marvelous changes.

I have with me some photographs of a young woman who weighed 76 pounds when she began her exercises, and in three months had gained over thirty, and at the end of the year weighed 130 pounds, as well as being able to digest any rational food that she put into her stomach, and endure as much fatigue as women in general. This young woman, whom I personally knew, was a great proof to me that physical culture is a good thing. The ladies of the school instilled into her mind that she must stop fretting about her nervous and prostrated condition, and make her stomach take food whether her appetite suited the case or not. Her mental condition did not become accustomed to the new departure any more rapidly than her physical, but they both did in time, and this year she has been a successful school teacher. This case is very similar to the one that I knew of some years ago—a young lady doctor, who could not practice after graduating. She traveled in vain on both land and sea, to regain her strength. Then her friends made her a small gymnasium in an upstairs room, in which she practiced every day, and after a few months she was able to carry on a good business.

A year and a half ago I suggested to a young woman who spends the day in a down-town office, to try the physical culture school two or three times a week, in connection with liquid diet for her general debility. I also suggested the moderate use of a wheel, and a trip to Colorado. She began on the wall chest weights at the school, lying on her back, and other moderate and gentle exercises. In six months she told me that at first she went to the school to take the exercises when she was not too tired, but now, she says, if I have a hard day's work to do, I go there first, and feel refreshed before I begin. This winter she can outdo older students, in some difficult exercises, failing in others less difficult.

Girls can find a good deal of fun among themselves in bifurcated skirts. There is a freedom that is similar to horseback riding in California or among the mountains in similar attire.

Soul culture we may leave to the student of divinity, yet not entirely lose sight of it among medical students, whose thoughts must deal largely with material truths. Huxley's description of the merging of the Society of the Seventeenth Century "for the improving of natural knowledge," into the Royal Society for the same purpose that still exists, makes us revere a man who can so revere natural forces, as to spend his life in showing others the

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beauties of nature, and the many means of improvement of human existence, by studying natural forces. He starts with the plague in 1664, and shows that now such pestilence does not exist because men have learned to take advantage of natural knowlege; and again the great fire of London in a few years, taught them that something must be done to avert such disasters.

Physical culture is simply making use of and improving natural forces. The clown asks the circus actor why he runs around the ring. "I'm getting my wind," he replies, which is the truth, and perhaps the answer was better understood than if a detailed account of all the physiological actions in the system was given. Huxley says, "I should not venture to speak thus strongly if my justification were not to be found in the simplest and most obvious facts, if it needed more than an appeal to the most notorious truths to justify my assertion that the improvement of natural knowledge, what ever direction it has taken, and however low the aims of those who may have commenced it, has not only conferred practical benefits on men, but in so doing, has effected a revolution in their conception of the universe and of themselves, and has profoundly altered their modes of thinking and their views of right and wrong. I say that natural knowledge, seeking to satisfy natural wants, has found the ideas which can alone still spiritual cravings. I say that natural knowledge in desiring to ascertain the laws of comfort, has been driven to discover those of conduct and to lay the foundation of a new morality."

These assertions from the eminent English scientist pertain to the study of paleontology, biology, astronomy and allied forces, including physiological forces. Culture of the human frame is but a branch of natural science. We may not find it all in a well appointed gymnasium, for the poles to vault and bars to stride are beyond the agility of or bring about non-beneficial results to some individuals.

A popular lecturer on gynecology has said that women cannot perform all the gymnastic feats that men can, as they are not built that way. The floor of the pelvis is so much more perfect in the male that he can perform muscular feats that the female had better escape. His greater tendency to inguinal hernia does not overbalance women's peculiar anatomy. For instance, the spring board. He is a good clown who can run a few yards, and jump over four or five elephants and a dromedary from a spring board. This performance makes a fine showing in a one, two, or

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even three-ring circus. I believe they do not utilize the belle of the trapeze. She may be able to learn to do it, no doubt, but not for many years. She can better perform in the air, hang by her teeth or her hair.

In the report for 1898 of the National Educational Association, I find an article by Dr. Taylor, of New York, on "Vigor and Exercise." He says: "Our people are just beginning to recognize the value of country life and occupation, combined with out-of-door employments, for the defective and degenerate. By such means the idiots, the insane, the dependent and the vicious may often be reconstructed and redeemed. Dr. Wey, at Elmyra, found that the vicious and incorrigible dullards of the State Reform School were physically defective. They respond to systematic exercise, and bathing, and a generous diet, and to nothing else. Dr. Spratling, of the New York State Epileptic Colony, at Songea, reports wonderful results from removing the inmates of crowded institutions to the detached buildings of the colony, and putting them at farm work. He says he has seen epileptic seizures disappear into the ground through a hoe handle. These are but samples of a most promising field that is only just beginning to be worked. He concludes, by saying: 'We may I think, safely conclude that man is formed for muscular activity, and that through a wise use of exercise his organs and powers may be educated, strengthened and refreshed. Happy he who in earlier years has acquired special interests and intimacies under an open sky. Physical training, then, like training of the mind and heart, is for all ages and all conditions, a most wholesome and necessary ingredient in the full cup of life. Are there higher ideals than strength, courage, service? Dare we neglect the physical in their cultivation?' Dr. Fitz, of Harvard, says that 'tag' is one of the most educative of plays, for it brings about an instant control of the body, through balancing, sudden stopping and starting, and a general control of force, such as only games demand.' And I find that culture school teachers enjoy giving their pupils games to play. They must rest the muscles and the mind. The 'tag' game may be a good one in a culture school. I know that it used to be in the district school."

The following is from a teacher: "The acquirement of health and strength means also the acquirement of grace. One of the soundest theories in the Ling or Swedish system of physical education is that with perfect physical development comes perfect bodily grace, for with perfect development comes perfect co-ordination of every set of muscles."

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Few of us can hope to attain perfection in development, but we may approach it, and thereby approach perfection in grace. I would say to the awkward, undeveloped, flat-chested girl, who insists upon a "few pretty attitudes" as a means of acquiring grace, that she will never attain it in that way. If she will loosen her clothing, and by careful, systematic training, give her body the opportunity it craves, for rounded symmetry, grace will come of itself. Not that the graceful positions hold no place in the gymnasium. They do, but they were never intended as a system of physical training, or as grace giving in themselves.

When an instructor recalls the line of young ladies taken into the gymnasium for training, as a line of pale-faced, undeveloped, flat-chested girls, with the head and shoulders dropped forward, and the appearance of a lack of strength to hold the body together, nothing is so gratifying, or fills her with a love and enthusiasm for her profession, as a few months later, at her command "Fall in," to see lined up before her in a few seconds time, a class of young ladies with heads erect, the chest thrown forward, the hips back, the legs straight, the toes pointing out at the prescribed angle, and the arms hanging straight from the shoulder, with such a snap and sparkle about the faces as to fill the soul of the spectator with happiness at the change.

As a knowledge of the benefits of a perfect system of physical training grows, the necessity for the opportunity of making use of such a system is obvious, and the department of education which cares for the body, must find, and is finding its place beside the one which develops the mind.

DISCUSSION.

Dr. Lewis: This is a good paper. No one can listen to it and not be exhilerated himself. But these are useless words, for we do not expect anything but good papers from Dr. Longshore. I simply wish to add my commendation to what she has said. I feel that I should criticise myself for not carrying out the principles she has so ably advocated, and for not having done more in my own life than I have. I can see many opportunities when more attention to physical culture would have been better for my patients and myself. It is unnecessary for me to say more about this paper; its excellence is too plain to need discussion.

Dr. Mead: This is an able paper from the writer's standpoint; it is an earnest plea for the necessity of physical culture to fully develop the body as well as the mind, but I want to say there is

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the danger of excess in calisthenics. Now in the days of Rome, the gladiator, the man of the greatest physical prowess, was a criminal condemned to death. But he was born physically strong and great and did not become so by artificial means. I should have you notice that today among our football players, our athletes and our baseball players, among those who have attained the highest degree of physical perfection, we find many consumptives. What is the cause of it? It is the excess of physical exercise. I believe we can go too far in training our bodies by physical exercise. I believe that the condition of the mental powers often has a great effect in the development of the physical powers. If you will but notice you will see that many of our ablest statesmen, like Tilden and others, who were not devoted to physical exercise, but whose brains were active, lived to an old age. So I believe that longevity does not depend entirely upon physical exercise and that it is possible to go too far in this respect.

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Dr. Fryer: I regret that I only heard a part of Dr. Longshore's valuable paper. I am sure it was in the right direction. For many years I have been interested in physical culture. I cannot agree with the last speaker in totality. What he says about our athletes is in part true, but Mr. President, the perfection of the athletic training of today is not playing football or baseball, but it is the light exercise of the gymnasium. It is not excessive muscular work. Among the Germans in their turnvereins, there is no excessive muscular work, but it is work with the wooden dumbbells; it is the using of every muscle in the body. The Doctor is correct when he states that excessive work in football and in foot races is bad. The rowing over a four mile course is bad, but the training which leads up to these performances is not bad. It is these severe spurts of work when the training is finished that do the mischief. Many of these men who afterwards get phthisis get it because they do not keep up their work. If they kept up a reasonable amount of physical training they would not get phthisis.

Dr. Schenck: A sound mind in a sound body is an old saw. The two go together. You cannot have a good mental development, strong, persistent and enduring mental activity without a good physical organism. I agree entirely with Dr. Fryer in regard to over-exercises of some of our athletic clubs and our colleges. The over-developed physical man is never as a rule long-lived. The idea of a sound mind in a sound body is not to de-

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velop the body of an ox or a behemoth, but to develop simply physical strength sufficient for the purposes of the various functions of the organism. We are told that the students of our colleges who engage most in baseball, for instance, are the best students. I do not believe any such thing. Mental culture requires persistent and constant application and the diversion of the mind from mental culture by physical culture—physical over-culture—is never a good method of mental and moral development. We know what the history of the athlete is. After he has developed an organism like that of an ox his powers break down and the result is a premature death in a large proportion of cases. When disease attacks these men they go down more rapidly than the ordinary healthfully developed man. We want physical exercise; we want enough of it to develop a good physical organism. Men and women are in the main built alike; their lungs, their hearts, their livers, their stomachs and their spleens are about in the same place; but if we take the fashion plates of the day and look at a woman we are a little likely to say, as did Ashley Cooper say of a young lady, "Yes, she is very pretty, but I wonder where she keeps her liver, her stomach and her spleen." And the wonder is indeed where the ladies keep those important organs—important to life, important to health, important to development. I had hoped that when ladies largely entered the profession that their influence upon their sex and their knowledge of physiology and anatomy would help do away with this fashion which has been so long in existence and which is so common that some physiologists have told us that thoracic breathing is normal with women, whilst abdominal breathing is only normal with men; that children, both boys and girls breathe both abdominally and thoracically, but as a girl commences to develop into womanhood her nurse or her parents begin to cramp her, and the result is that among civilized people very few women breathe abdominally; that portion of the lungs which is most fully endowed with air cells is made useless. Such things cannot be and the individual remain healthy. We want to develop better busts upon the women. We want to adopt the Grecian models of women and seek to imitate them rather than the wasp-like waists of fashion. I trust that the ladies of the profession will use their influence against fashions of the day and make woman what she ought to be, a symmetrical, beautiful, well-developed physical form. I am glad of this paper. I am glad of every effort that seeks to better the condi-

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tion of both men and women through proper exercises and proper dress.

Dr. Longshore: I supposed that Dr. Schenck was a reader of the *Sunday Capital.* If he were he would know what is being done along the line of reform which he proposes. The *Capital* and other papers which I see are printing pictures of fashionable women, but I am happy to say that these women have waists. The papers employ artists who know how to make pictures, and these new pictures really have waists. Another thing I would like to impress upon the minds of my readers, and that is that excessive exercise has no part in my view of this subject and in the school which has been in operation here for several years, there is no excessive or over-training. The teachers know enough to suggest to the pupils the exercise best adapted to them. It is by no means impossible that there are training schools in which training is carried to excess, but time will show that those which pursue the moderate courses will attain to the best results.

Dr. M. B. Ward, of Kansas City, Mo., read the following "Report of a Case":

In presenting the following report of a case which came under my observation, I am confident that the members of this association will derive more information than were I to persent a paper on "Carcinoma."

When history has been read and the tumor examined, I am certain that each of you will say that it is an instructive case, and in some respects entirely unique.

I have been furnished a history of the case by the attending physician, Dr, H. D. Jerowitz, of Kansas City, Mo., which I will read:

"Bertha D., age 10, family history good, child healthy and robust, never sick with the following exceptions: About a year ago was taken suddenly with severe excruciating pain in right side. Physican who was called gave hypodermic which quieted the pain, and after being in bed two days patient was again perfectly well. No diagnosis was made at the time. About four months ago, patient was again attacked with severe pain in right side, referred to McBurney's point. I was sent for but as I could not be found, no one else was called. The pain was subsided in about five hours about as suddenly as it appeared and the next day the child went to school. I was told this by the

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family, and also was told that the child when sick screamed continuously.

I expressed a desire to see the child in the next attack, which took place on March 19, 1900. The child when in school was suddenly attacked with pain and went home. Her hands and feet were quite cold when I arrived at the house, and I found her in great agony, lying on her right side with her thighs flexed. She referred the pain principally to the region of the gall-bladder. Temperature normal, pulse somewhat accelerated. No symptoms of peritonitis. On account of the intense suffering I could not examine her at the time. I gave her ½ gr. morphine hypodermically, and getting no effect in half an hour gave another ½ gr. hypodermically. Obtaining no relief in another half hour I gave her chloroform by inhalation and could get her only somewhat quieted while I used it. It took a third dose of morphine to give her relief. At that time, from the position of the pain, the acute onsets and sudden subsidences with the absence of fever or inflammation, the probability of gall-stones suggested itself to me, but when I visited the child in the evening I altered my opinion. By this time (about eight hours after the onset of the attack) the child felt better, but the temperature was above 100. I examined the child and found a circumscribed mass in the lower right side of the abdomen. The mass was about 4 inches long in its transverse diameter and about 3 inches from above downward. The greatest peculiarity, however, was its position. Its extreme right end was just at McBurney's point, while its left border was 1 inch to the left of the median line. I diagnosed appendicitis, yet thought it a little strange that it should extend so far towards the left. From that time on it partook of the character and changes which occur in appendicitis, an apparent gradual increase of tumor, increased temperature, high pulse (130 to 140), tympanites, and pain at intervals. Tumor felt boggy and somewhat fluctuating. Condition became serious.

"Dr. Ward was called in consultation and agreed with me that an operation was urgently necessary, but was doubtful as to the diagnosis. Operation, however, was refused by the child's father. The patient gradually got better, temperature and pulse normal, bowels moved, pain was absent and mass receded in size and became tolerant to pressure again. The patient was better for a week, during which time I continually urged an operation, but received no consent until the old symptoms returned suddenly

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with more violence than before, mass again increased, pulse went up to 150 and patient was almost on the point of death. The operation was performed on Saturday evening, March 31, 1900, at 9 o'clock, twelve days after the onset. The operation was done under bad light, with patient in a serious condition, and surroundings not of the best. Instead of appendicitis it proved to be a dermoid cyst 4 by 3 inches, with absence of uterus and one ovary. The cyst was snccessfully removed, the abdomen closed without drainage. The progress was good, only that immediately after operation the pulse was as high as 180. The temperature gradually went to normal, and on the seventh day the stitches were removed, the wound perfectly healed, and thanks to the skill of the operator, the patient is now walking around.

"Dr. Ward and I were assisted in the operation by Dr. I. J. Wolf and Mr. A. E. Gerish."

In addition to the foregoing report I wish to add, that while it is true, as suggested by the attending physician, that I did not think the child was suffering from appendicitis, yet, at the same time, I could not make a diagnosis. There was a large quantity of ascitic fluid in the peritoneal cavity. One side of the tumor was filled with thick black blood and the other side was dermoid material. The pedicle was twisted, which no doubt accounts for the suffering, if not for the temperature. There was no disease of the appendix. There was no uterus, unless a part of this tumor is that organ; neither was there another ovary.

W. E. McVey, B.S., M.D., read the following paper on "The State Control of Tuberculosis:"

The obligation of a municipality or commonwealth, in the disposition of its citizens afflicted with chronic infectious diseases, depends upon the danger which threatens the population as a whole and the possibility of eradicating the disease or diminishing its fatality. The infectious nature of tuberculosis is too well established to need any further exposition of the facts which demonstrate it. A most notable example of the unobstructed development of an unmitigated tubercular infection is that of Mentone, in Italy, which was at one time a Mecca for all the tubercular afflicted The invalid guests were unrestricted in their intercourse with the people or in their habits and, in a comparatively short period of time, this great resort for consumptives had become a hot-bed of disease, and although prior to the general recognition of its climatic resources, consumption

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was unknown among the natives, now the formerly robust healthy population became generally tuberculous. Much the same result has been observed in certain sections of California and Colorado.

The well established infectious nature of the disease taken in connection with the fact that in the United States it is estimated that at least 164,250 people die annually of tuberculosis, an average of 450 each day, alarming as it seems, should have awakened a proper appreciation of the great danger which is threatening our population.

Even this, however, may be considered an improvement upon the conditions formerly existing, for there has been a steady decline in the death rate from tuberculosis for some time. It is estimated that, during the last decade, the death rate from consumption in the United States has diminished at least 10 per cent. This reduction has doubtless been due to a better education of the people along the lines of the care and prevention of disease, and such restrictions as have been placed upon the spread of tubercular infection by certain States and Territories; but particularly due to a better understanding of the pathology and treatment of the disease by the medical profession. This reduction in the death-rate is also noted in other countries. In 1895 the statistical report showed that in Glasgow the death-rate from consumption had diminished 40 per cent. during the 40 years preceding; in England and Wales it had diminished 50 per cent. during the 24 years preceding. Many factors have been involved in this tendency toward improvement, all of which have doubtless grown out of the attention which has been given to the subject of tuberculosis by the profession during the past fifty years. The results are encouraging, though they do not approximate what may be or has been accomplished by the rigorous enforcement of quarantine regulations. It is a surprising fact that we must go back in our history more than a hundred years to find definite reports upon this point. A hundred and twenty years ago the kingdom of Naples was afflicted with a scourge of tubercular infection which threatened to depopulate the kingdom. A most rigid quarantine system, enforced by fines and banishment, and made more effective by fire and isolation, resulted so far in the eradication of this disease that this once greatly afflicted country has now the lowest death-rate from tuberculosis of any country in the world.

I would not suggest that the tuberculous element of our population be subjected to the hardships of rigid quarantine regula-

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tions, because I believe such a course impracticable and unnecessary. I do think, however, that some of the principles of the quarantine may be safely and profitably adjusted to the present needs. We can only speculate upon the ultimate end of any legislative enactment for the regulation or control of tubercular infection. It is altogether probable that no such legislative interference would result in any pronounced or permanent benefit. In a great republic, where laws must be enforced as well as made by the people, there must first be a strong public sentiment in their favor or such laws soon become inoperative.

Health boards have occasionally recognized the danger, and have issued circulars for the public information in regard to the care and prevention of tuberculosis. These circulars have no doubt disseminated some knowledge of the infectious nature of the disease, but it is surprising how generally the idea of heredity still prevails. Until the people can be thoroughly convinced of the infectious nature of tuberculosis little can be hoped for from legislation.

Spitting ordinances have been adopted by various cities, but in nearly every instance have soon been utterly disregarded because the people attached no importance to them except as a means of satisfying the importunities of a few over-fastidious individuals.

Laws which relate to the spread of bovine tuberculosis have been made and are tolerably enforced in a number of States in this country. It can be hardly said, however, that the relation between bovine and human tuberculosis received more than a passing consideration either in the enacting or enforcing of these laws, but it is generally conceded that this is an important step toward the end desired. Sufficient evidence has not yet been produced to positively determine the susceptibility of the human organism to infection by the bovine tubercular virus; there is on the other hand, not sufficient evidence to the contrary to justify us in ignoring this possible danger, and we are therefore justified in assuming that all laws regulating the spread of bovine tuberculosis and guarding against the use and sale of infected milk, are directly in line with any effort which may be made to suppress or eradicate this dread disease.

In making a fair estimate of the possibilities of controlling the spread of tuberculosis, one must give due consideration to its etiologic factors. By a general concensus of opinion we accept the Koch bacillus as the *sine qua non* in tuberculosis, but since our present knowledge does not comprehend a tangible means

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for the control of its dissemination or virulence, I do not believe we will derive much benefit from a repetition of what is known about it. In the study of the elements which make up what we call predisposition and what we call immunity, there is much food for thought, but since the correction of a pre-disposition involves, to a certain extent at least, the establishment of immunity, we will best serve the purposes of this paper by referring to the latter subject particularly.

A very early observation, which is no less noticeable now and no less true on account of its ancient origin, was that carnivorous men and animals were comparatively immune to tuberculosis. In the early settlement of Minnesota it was a matter of much note that many consumptives who went there recovered. The climate has not essentially changed but it is not now considered a very favorable country for this class of patients. Various theories have been advanced in explanation of the salutary effects of this and other early-day climates. That the good results were not due simply and alone to the climate or to the out-door exercise and exposure is very clearly evident from the fact that for weeks together the harshness of the weather kept these invalids shut up in little close cabins, the very rudiment of habitations, constructed with but little regard for cleanliness or hygiene. We also find that in Iceland tuberculosis is exceptionally rare. The native inhabitants have little care for hygienic rules of any kind and are mostly confined in huts uncomfortably and filthily crowded. These people are meat eaters, essentially carnivorous, as were the early settlers of Minnesota. It seems to me a rational solution of the question of immunity in these cases to say that at least a part of the resisting power lies in some element of some condition growing out of a meat diet. Whether there may be a difference in results accruing from the consumption of different kinds of meat may be an interesting question to solve. In the early-day climatic resorts wild meat, game of all sorts, was the staple of food, as in fish in Iceland. I believe if there is a difference it lies in digestibility, ease of assimilation, and relative food value. It is quite commonly observed that tuberculosis patients show most rapid improvement who are restricted to a meat diet, and though we are unable to establish a definite relation between tuberculosis and a deficient meat diet there is a cachexia closely related to the habit of large meat consumption which is strongly opposed to tuberculosis, in fact very closely approximating a true immunity. Sir Alonzo Clark is reported to

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have said that when he was a young man he had to choose between tuberculosis and gout and he chose gout. There is certainly very strong evidence to support the idea of an antagonism between an habitual meat diet and tuberculosis and a comparative immunity against tuberculosis in those who have a gouty diathesis. We are hardly ready to assume that there is a specific immunizing element present in these conditions; I am inclined to believe that this immunity or vital resistance depends upon the maintenance of an equilibrium between tissue metamorphosis and the process of reconstruction. A study of first principles shows us that all nitrogenous compounds are unstable. They are readily decomposed and readily changed from unstable into stable compounds and in this change evolve both force and heat, as we see in the arts great and sudden expenditures of energy frequently accompany the molecular changes which take place in highly nitrogenous compounds. All functionating tissues of the body are composed of nitrogenous matter. Ferments, which during their own molecular changes set up changes in the oxyhydro-carbons, are all nitrogenous. And we find that in all organisms where there is even slight vital activity the molecular changes are initiated by substances containing nitrogen. In the reduction of non-nitrogenous compounds heat is evolved, and when the reduction takes place within the tissues force or vital activity may be produced, but the molecular change is initiated by the nitrogenous elements of the tissue. There is then a concomitant metamorphosis of the nitrogenous compounds of which the functionating tissues are built and the non-nitrogenous compounds which permeate them, during the ordinary vital activities of an animal organism. Herbert Spencer is authority for the well substantiated statement, "That whereas nitrogenous substance is tissue-food, *both* as material for building up tissue and as material for its function; non-nitrogenous substance is tissue-food *only* as material for function." So with a fairly constant tissue metamorphosis there must be an equally constant supply of nitrogenous food substance in order to maintain the normal equilibrium between waste and repair. Excessive tissue metamorphosis either from exaggerated function or from pathologic conditions, must be counterbalanced by an increase of the nitrogenous elements in the food supply, and since meat contains by far the largest proportion of nitrogenous substance it is the food material upon which, in these conditions, we must depend.

The most important element in the production of these

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molecular changes is not taken in as food, but, in the higher animals, by the respiratory organs. The presence of oxygen is essential to the molecular changes in both the nitrogenous substances of the tissues and the non-nitrogenous substances, and any interference with its supply, by changes in the respiratory organs or in the circulation which distributes it through the tissues, or in the environment from which it is derived, must interfere with a perfect equilibrium between waste and repair. Light and heat have also something to do in producing the molecular changes which take place in all organic substances. I think therefore that in searching for the elements which produce immunity we cannot separate the influence of any particular form of diet from the influence of certain climatic conditions.

Poor digestion and faulty assimilation hamper the efforts at reconstruction, as also does deficient lung capacity, by limiting the supply of oxygen to the blood, and a defective circulation by an inadequate distribution through the tissues. All of these elements must be taken into consideration, for the effects of diet and climate in the prevention or cure of tuberculosis must be greatly modified by the degree of perfection in these very important fuuctions of animal life.

Probably in this lies the explanation of the necessity for the individual selection of climate according to temperature and atmospheric density. Suulight is one of the essentials in the successful treatment of tuberculosis, because it invigorates the vital activities and because it is quickly and surely destructive to tubercle bacilli. These invidious little atoms of organic life, which are capable of great achievements in the dark recesses of the human anatomy, droop and die when exposed for even a short time to direct sunlight. These things, which have so much to do with determining the question of pre-disposition or immunity, are not to be regulated by legislation; in fact, I do not believe either in the present or future efficacy of legislation directly against the spread of tuberculosis. Some regulations may be adopted which will assist in giving the people a better understanding of the nature of the infection and enable them to better protect themselves. In addition to the general distribution of literature upon this subject, the principles of hygiene and the nature of the various infections, periods of incubation and means of prevention, should be taught in our public schools. During the most critical period in the lives of our children, their mental development is being crowded at the expense of bodily vigor and

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functional perfection, and the foundations being laid for many of the chronic ailments which it is our province to investigate. This condition of affairs might, I think, be greatly modified if there were adopted into every curriculum in our public schools a course in physicial culture. I do not mean the "finicky," faddish, society drill, which has nothing for its object but perfection in beauty and grace in movement. I mean such exercises as will develop the chest and increase the lung power so that plenty of oxygen will be supplied to the tissues; that will give tone and strength to the flabby heart muscles and send the ruddy glow of health to the fading cheek; that will give power to the limbs so that walking will be a pleasure. These things lie in the way of both legislation and education, and will do much toward preventing the spread of tuberculosis. The State can do much more than this; it can lower the death rate among those who are already infected, and it can eliminate many sources of infection. It cannot legislate a good digestion, but it can supply the proper kind of food to those who are unable to buy; it cannot legislate continuous sunshine, but it can furnish its poor afflicted an abode where all the available fresh air and sunlight may be reached at pleasure, and where every precaution against infection may be used.

Sanitaria for the treatment of the consumptive poor have been demonstrated to be the most efficient means for diminishing the death-rate and the most adequate against the prevalence of the disease. In those cities of Germany where public sanitaria for consumptives have been in existence for many years the death-rate from tuberculosis has been diminished at least one-third.

The percentage of cures is much greater under sanitarium treatment than has been shown by any other plan. Climatic conditions forming the principal attraction of health resorts, are soon obscured in their therapeutic importance by the general prevalence of tubercle bacilli. The sanitarium maintains its value by stringent rules of hygiene, which can be only very imperfectly enforced by the local authorities of the ordinary health resort. There are but few institutions for the care of consumptive poor in the United States, but the results at these institutions are sufficient to demonstrate the possibilities along this line. The average cost for caring for hospital inmates in New York City is one dollar per capita, but in other institutions for the care of consumptive poor only, the cost per capita has been reduced to fifty cents per diem. In view of the fact that a much

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larger per cent, of cures result from sanitarium treatment, and also that in localities where such institutions are established a great decrease in the prevalence of the disease has been noted, it seems to me that every State should provide for the care of its consumptive poor and for the protection of its people against infection by the erection and maintenance of suitable institutions of this kind.

DISCUSSION.

Dr. Stewart: I have been very much pleased and entertained with the paper. I think that it strikes a note to which the medical profession of today will respond. It is a suggestion along the line of controlling and abolishing tuberculosis which is one of the most wide-spread and fatal diseases that afflict the human race. It is a disease that should have more attention than it does from the municipal authorities. A few States have taken the initiative in providing some such place as the Doctor recommends in his paper. Sanitaria have been established in Massachusetts, in New Hampshire, in the mountains of Colorado, and in various parts of the country. The benefits are very great. The patients live in the open air and the climate and exercise have a beneficial effect upon the most advanced stages of the disease. One of the most difficult features of tuberculosis to combat is the idea of heredity. People will tell us, and a good many physicians believe, that tuberculosis is hereditary, but the fact is, when you come to look over the statistics that have been gathered you will find that the idea of heredity has but a slight foundation—only fifteen per cent,—which may be only a coincidence. I think it our plain duty to instruct the people upon this subject. A man will tell you that his relatives died of the disease and he feels that he has the disease as an inheritance; he feels sure that he will be a victim, and he falls into a condition of hopelessness that is very hard to combat. I believe that what is known as heredity is only a certain weakness of constitution which we call predisposition. I went to a waifs institute in New York City where there were gathered many children from the tenement houses of the city, many of whose parents had died from tuberculosis. It was astonishing how many records they had of such cases; yet, when the children were taken young, and before they had become infected, and were given plenty of good nourishing food and a good nursing, the number who developed into tuberculosis was exceedingly few; so that if we

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take persons away from their environment; from the house where their parents and grandparents and perhaps other generations have lived and died from tuberculosis, the children will grow up free from the disease. Not long ago, I think through the efforts of Dr. Schenck, we had an ordinance passed against spitting on the sidewalks and in public places. I notice a great many people nowadays in walking along the street before they spit look around to see if anybody is noticing them and many will step to the curb and spit into the streets. It has had a good effect and if we were a little more watchful and personally interested in this matter we could make the benefits of the ordinance still greater.

Dr. Schenck: This is a very important paper upon a more important disease, one that knows no locality as its home, one that recognizes no age among its victims; but all ages, all places, furnish victims to tuberculosis. It is evidently a disease of lowered vitality. Whenever the health sinks below a certain level the more mobile and immature cells of the body reproduce themselves in a defective form and this goes on so rapidly until they form little tuberculosis masses. If we can keep the vitality of the organism above a certain level we need not fear consumption. As to its being hereditary, lowered vitality is an heredity. It is only in the lowered vitality that this heredity exists, that is to say, an organism is formed that is more susceptible to this particular degeneration than other organisms because it is a lowered form of organic life. Otherwise I do not think that consumption is hereditary. We have a law in Kansas for preventing the development of consumption in a certain way. There comes to my mind a family with whose history I am well acquainted. Moses V. was a vigorous, hale young man; he married a woman like unto himself, but he very soon became exceedingly intemperate. There was born to this intemperate man two sons and three daughters. The two sons were likewise intemperate, following the footsteps of their father. Two of the daughters were consumptive, the third was vigorous. The vigorous daughter married a hale man and bore to him eleven children. Of these children every one was consumptive. All died of consumption who didn't beat consumption by dying first of delirium tremens. The children of the other child of this family were all tuberculosis. Showing, not that there was heredity, but that the lowered vitality consequent upon the intemperance of the sire and the grandsire tended to develop

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tuberculosis in his descendants. The next generation, which is now coming up with many of whom I am acquainted, are outliving, wearing out as it were, by developing better organisms, the tendency to consumption, and but a few of them show any signs of the disease. As to the climatic treatment of consumption, I think we have more to hope for from that than from any other particular form of treatment. Well-nourished individuals, living at a proper altitude where they have to make full inspirations, living in the dry atmosphere where there are no extremes in temperature, will not develop phthisis. And if they have contracted it, the dry air and equable climate will tend more to prevent its development and cause its cure than any other mode of treatment with which I am acquainted. In the olden times, when I used to practice medicine here in Kansas, I sent a good many patients to New Mexico and Arizona. Some were so far advanced that I feared I should not succeed, but as I recollect those patients now, I do not remember one who was not cured.

A Member: I was very much interested in the paper. The Doctor has broached a subject which may be expressed as one of the burning questions of the age. It is compelling the medical profession to look forward to some method by which the death-rate from tuberculosis may be reduced. The paper is certainly apropos to the occasion. I earnestly hope that the resolution which we have just passed will accomplish something toward the regulation of tuberculosis. A great deal can be done by educating the people to an understanding of this disease. How many of us have been called into a family of consumptives and see one by one drop off. We can do a great deal through our board of health. Whenever a consumptive dies the fact should be reported to the health board and the house should be thoroughly disinfected. I have seen families, in which there was consumption, live in a house for a time and then move into another house and a new family take up its residence in the house thus vacated, and I have seen the new occupants taken down with tuberculosis. I am satisfied that the poison had been left in the house. Now if cases of this kind could be reported to the city board of health and a rigid quarantine and inspection and disinfection of the house made just as in the case of smallpox or scarlet fever, we certainly could do very much in preventing the spread of the disease. Another thing: Very much can be done by municipal authorities by exercising a watchful care over the milk supply of the city. We had in the

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east a system of inspection of all dairies and when a tuberculous cow is found, what do they do? They at once destroy the animal and stop the development and the production of any more tuberculosis germs. Now, if we can do this in the case of animals we can certainly do it when the saving of human life is the stake.

Dr. Peters: I think this a very important subject, one that we can all discuss with interest and advantage. I believe the first step for the medical profession to take in this matter is to set ourselves right. I think we are practically wrong ourselves on this subject. Our teachings are wrong or they have been wrong in the past. We assume today that it is not an hereditary disease. Some of our strongest writers and strongest men are asserting to day it is not an hereditary form of disease, and we have acted upon that principle; but every one of us who has been an examiner for a life insurance company, acts upon the basis that it is an hereditary disease. People come to us to be examined for life insurance and one of the first things we do is to try to discover whether there has been any tuberculosis in the family. The applicant says, "Yes my father or mother or mother's sister or some member of the family died from consumption." "Well you can't pass this examination. The best thing for you to do is to drop this, go home and give up the idea of having your life insured." He goes home and tells his wife and it gets spread about that tuberculosis is an hereditary disease. Before we ask the Legislature of the State of Kansas to help us out in this matter we must first set our own household in order; then we can do something. It is infectious or not infectious; it is hereditary or it is not hereditary. We had better teach the people that it is not, and stick to it, and then we have some hope to accomplish something along this line.

Dr. Boyle: The doctor has just spoken something in regard to insurance companies. I would state that the other day I made an examination for the Pacific Mutual, and the general agent who was present, said to me, "Doctor, do you know it has been decided now that tuberculosis is not an hereditary disease and that you can pass a man who is himself all right where several of his relatives have died from consumption?" I told him I knew that was a fact, but not that the insurance companies recognized it. He said that company recognized it. So you see the tendency is toward the recognition of the fact that tuberculosis is not an hereditary disease.

Dr. Daugherty: The Doctor has given us the history of Minne-

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sota during its early days. The same thing is true of every State in the early days. I do not think that the results of which he speaks were due entirely to the meat diet. It was due to the houses in which they lived. Many of you can recollect what kind of houses they had. There were no carpets upon the floor. The floor was made of slabs split out and were not tight. There was no clapboarding upon the house; the roof had no ceiling overhead. We had numerous fire places, and big roaring fires that carried up the air all the time; we had an absolutely pure atmosphere. How is it to day with your carpeted floors, with your window-blinds and curtains to shut out every bit of sunlight lest your carpet be faded by it? With all your boasted sanitary regulations and your plumbing and everything else, the old houses were the best in the world. In 1850 I knew many men who went to California from the States with tuberculosis, some of them pretty well advanced. It was a six months journey across the plains and the mountains in those days, and the life out of doors, the rough fare, the camping out, the travel through the country where but little expectoration had ever occurred, and the return trip made them well. It was not the climate of California, because if you go to California today in the Pullman sleeper you will want to take your coffin with you. No, it was the out-door life, it was the simple diet from which a man never gets dyspepsia, where his lungs are well expanded and he has plenty of oxygen. It is just the same today; if you will take a man out in the country, put him into a tent, drive him over the plains, keep him out of modern houses, he will get well of consumption in more than half of the cases if not too far advanced. Now, as to the problem of heredity: The disease is not hereditary, but there is a predisposition to the disease; there is a tuberculosis soil, and if it comes in contact with the germs, the consumption advances very rapidly. There may be something more than that even. There may be a sufficient potency in the predisposition to generate the disease *de novo*. If we want to cure our consumptives we want to keep them out of modern houses; we want to get them out of doors.

Dr. Brickell: I practiced medicine for about two years among the Negroes of the South. They occupied houses exactly like those described by the last speaker, but consumption is rapidly on the increase among them, so that while I do not care to deny the truth of his suggestions regarding the value of the open atmosphere, I do not believe that the house has anything to do with it. In the hope that it will be of general interest I

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would like to mention just one personal incident. There has not been upon my father's side of the family for two generations back, any consumption whatever. My father lived to be about eighty years of age and my mother lived to be about seventy-five years old. My wife's people have lived to be old. Her father and mother are still living. With one child we moved into a house that had been recently vacated by a lady who had consumption and who went to New Mexico. I am as confident as I am of anything that my baby became infected in that house, and as a result developed a tuberculosis which killed it within a year.

Doctor Leslie: The subject has been pretty well discussed, but there is one phase of it which has not been brought out. There was a time many years ago when all through this western country, California, Colorado and Minnesota, they did not have any tuberculosis. There were no people there and the disease was not there. At that time when a tuberculous patient went to any of those States he received a great deal of benefit, but he does not today because that whole country is infected. I don't know where you would send a man to New Mexico, Colorado, California or anywhere in that section today, without sending him right into a district infected with tuberculosis. Every house and probably every room in many houses, has had some patient who died of tuberculosis, and I am inclined to suspect that we are doing the worst thing in the world to send patients to those places. It would be better to send them out into the country among the farmers where there has been no cases of tuberculosis. But I believe there is still a section of country which is not infected and that is the western half of Kansas and particularly the northwestern portion of the State. We have very little tuberculosis in my section of the State. There has not been a case within ten miles of my town for three years to my knowledge. If you want to send a patient out to benefit his health that is a good section, and yet I don't know that I want to see that section infected wtih tuberculosis. In regard to infected milk: I remember some twenty years ago of three little boys who were born in the same month; they lived and thrived and were as healthy babies as I ever saw until they were about a year old. After they were weaned they were put upon milk from the same cow and shortly they became diseased. Symptoms of tuberculosis advanced and they had tuberculosis. After a while the cow died and an examination was made and it was found that she

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had tuberculosis. In regard to life insurance: About a year ago I examined a robust, healthy man for insurance. He gave a history of tuberculosis in his family. I made the statement that this man was strong, healthy vigorous in every way and the company accepted him. I don't know what other companies do, but this one accepted that man.

Dr. Magee: We have got past the time and day when we believe that tuberculosis is not infectious, I think we believe it is. We have succeeded in isolating the germ; it can be cultivated, an animal can be inoculated with the germ and the disease produced in it, so that the physican who does not take extra precaution to destroy these organisms by destroying the sputum which comes from his patient, is not doing his full duty either to the patient or to society. Neither is he doing his duty when a patient removes to some other locality, unless he sees to it that the premises are well fumigated. Unless we do these things we are not carrying out the full measure of our teachings and the present status of our knowledge upon this subject. I wish to say in reference to our City Board of Health that in Topeka, whenever the board is notified by a physician that a house has been occupied by a tuberculous patient and that the patient has been removed, the house is fumigated every time. This has been done for several years past and I believe it is a proper thing to do; thus living up to our standards of knowledge.

Dr. Sawtell: I don't think that the medical professien at this time is very widely apart on the question of the heredity of tuberculosis. I do not believe that the intelligent physician believes that tuberculosis is transmitted the same as specific diseases. It is simply a tissue soil that is transmitted. You go into the forest and you will find a scrawny tree. Dissect it and you will find it full of germs, simply because there is a tissue soil there that is favorable to them. You take a human being who is imperfectly developed and you will find a tissue soil favorable to the development of tuberculosis. We see this in life insurance. Insurance companies have a schedule of heights and weights. For instance take a person who is five feet and eight inches high he has an average weight of about one hundred and fifty pounds. You look over the mortuary records of these insurance companies and you will find that seventy-five per cent of those who die from tuberculosis were under this weight. Consequently when life insurance companies have an applicant with good physical development he will be accepted although there

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may be some tubercular history in the family. But if he be of low weight, or of poor development, he will be rejected. This certainly carries out the idea that it is not the transmission of the specific trouble but simply of the tissue soil, because the death reports show that the highest death-rate from tuberculosis is among those below the medium weight.

Dr. Schenck: I referred to a family of eleven, who all died from tuberculosis. All of these individuals were married, and hence lived in the closest relationship. But neither the husband nor the wife ever contracted the disease. There was good opportunities to do so if it were a contagious disease in the sense that smallpox and other well known diseases are contagious.

Dr. McVey closed the discussion: A great many points have been suggested. In the beginning of my efforts to build a paper I had in mind a great many suggestions in the line of legislation. It seemed to me that it was a matter of possibility for the State or the government to control the spread of tuberculosis; but after thinking the matter over carefully and having called to mind the very large number of really good laws upon our statute books unenforced, I came to believe that it was impossible to legislate effectively except in the line of public opinion. There must be a public sentiment first. If you can first reach the people along the line of infection; if you can teach them that tuberculosis is an infectious disease; if you can impress upon their minds the danger which they are in when they occupy a room with tuberculous patients and when they are careless about the disposal of sputum, then a law upon the subject might be of some value. I think that the first step in this direction is one of education; then it is possible to have State control. The laws which regulate bovine tuberculosis were not passed because of danger to the human family. They were passed because the farmers and stockraisers recognized the danger to their herds. It was a matter of money and they were willing and anxious to have such laws passed and enforced.

Heredity in disease is an indefinite thing. It is almost impossible to define just exactly what we mean by the term heredity. I think that the question is still an open one. We know that there is a predisposition to tuberculosis, or, if not a predisposition, there is a lack of immunity. Now, we may call it heredity or we may call it predisposition, but I am content to simply call it a lack of immunity. There is a lack of resistance to the infection by the tubercular bacillus. The point which I wished to

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emphasize most particularly in my paper was the essential relation between the nitrogenous food elements and oxygen. It is absolutely necessary that the patient afflicted with tuberculosis should have oxygen. His lung capacity must be increased. I have found in my experience that people in a great many cases have established a certain amount of resistance in early stages of tuberculosis by developing lung power. It is not a difficult matter to put on several inches of expansion in incipient phthisis, and when you do that you have greatly increased the resistance to the tubercular process. In some cases you may hasten your cure and I think that this plan of treatment in connection with the excess of nitrogenous foods in the diet, are among the chief features in the management of the disease. As I said, I do not know how much there is in climate; I do not know how much there is in diet, but it seems to me that these things are interdependent; that they must be taken in connection with each other; that we cannot depend on climate alone for the cure of tuberculosis any more than we can depend alone on certain forms of diet. It seems to me that they are too closely associated to be severed and depended upon alone.

The point which Dr. Sawtell made in regard to low weight is another point in support of my claim that the lack of immunity lies in the disturbance between reconstruction and waste.

Dr. C. O. Goddard, of Leavenworth, read the following paper on "Glosso-labio-pharyngeal-paralysis (Cerebralis)."

The trouble to which I wish to call attention is not bulbar paralysis though it is often spoken of as pseudo-labio-pharyngeal paralysis. True bulbar trouble is slow in progress, coming on insidiously after the patient has suffered severely for weeks or months from excruciating, tearing, ripping pains in back of neck, shoulders and spinal region; even then it is only after some time has elapsed that friends or relatives notice the first symptoms, such as clipping of words, druling of saliva and drooping of corners of the mouth; whereas the trouble I refer to comes on suddenly, with greater or less intensity, even at times being ushered in with apoplectic symptoms and as a rule being limited to the lips, tongue and pharynx, pharyngeal trouble rarely asserting itself.

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The authorities say that this disease may stop or stand still in symptomatology for months or years—and that recovery may even take place—that it is more hopeful than true bulbar trouble; perhaps it is, and I do not doubt their prognosis although in my limited experience there has been but one ending, and that rather a speedy one, death. And further than this: these peculiar symptoms supervened in cases that did not appear to be critical at the time. The first intimation of trouble in one was difficulty in swallowing; in the next case clipping of words and slurring of sentences was the first symptom. Autopsies have shown multiple foci of softening in different portions, particularly in "cortico-muscular tract which contain fibres that control speech and deglutition. This tract extends, probably, from lower third of the central convolution and ends in nuclear region of medulla oblongata."—*Hirt.*

The trouble may be diagnosed from bulbar paralysis, by the asymmetry of paralysis, shown in the orbicularis-oris particularly; also by the absence of laryngeal symptoms, and no electrical action of degeneration, and possibly from absence of atrophy of muscles involved, should the case last long enough.

The symptomatology is rather meagre; generally symptoms of paralysis supervene rather suddenly without any premonition and unaccompanied by either pain or discomfort of any kind. All at once the patient shows trouble in pronouncing words or difficulty in swallowing liquids. Hourly these troubles grow in severity, until finally, deglutition and speech are annihilated, and death mercifully relieves the sufferer from the terrors of his helpless condition.

The first case that attracted my attention was that of a large, fleshy, middle-aged woman who had been suffering for some time prior with a severe attack of cardiac asthma. About three days previous to my visit, she found she was having trouble in swallowing liquids, which difficulty rapidly became worse until the day I was called, at which time she could swallow nothing whatever. Her thirst was extreme, and when, agreeable to my request, she made the effort, the terror depicted upon her countenance was pitiful to behold. Within twenty-four hours death ended her anxiety and she was at rest.

The next case was a man upward of seventy years of age who was attacked while serving his family at the supper table. He suddenly became rigid and motionless, unable to talk, face expressionless; within two minutes he recovered conciousness

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and remarked "that was a queer feeling I had just now." He was very much surprised when I appeared upon the scene a few moments later and could not understand what I was there for. While talking about my visit he had another attack similar to the first one and continued to have them about every half hour or hour until the end. He began slurring his words immediately after his first seizure, this symptom gradually became more and more pronounced; on the fifth day trouble with deglutition followed and on the seventh both functions were completely abolished and death mercifully interposed the eigth day from the onset of the trouble.

The third case was another corpulent woman, somewhat past middle age, who had for years been a high liver and one that loved all the creature comforts of this life, especially those of a liquid nature. She was also a sufferer from asthma of the cardiac type. This case was ushered in by clipping of words and slurring of sentences, then some difficulty of swallowing, both of which symptoms became worse and worse until the sixth day when death took place. Complete inability to swallow or articulate occurred two days prior to dissolution.

The point I wish to make, is the seriousness of certain symptoms at their incipiency in some cases, that otherwise do not impress one as being at all dangerous when first seen by a physician.

I may be making a mountain out of a molehill, the cases which I have seen being mere coincidences; but besides those mentioned I have seen several others and in all of them the ending has been the same. The symptoms are pathognomonic of nuclear softness of a very rapid kind and are not, in my opinion, to be confounded with cases of general paresis, or aphasia.

At times it is simply startling to see a patient heretofore in apparent health, all at once stricken by these vital phases of disease and rapidly slip away into the realm of immortality with little or no warning of danger to their friends or relatives. They themselves, in my experience, seem to have no idea of their critical condition and are apt to make light of their ailment, expecting shortly to be as well as ever and even go on planning for the future when they have only days and sometimes hours to live, and so while they firmly believed their lives are to go on to full fruition they are suddenly hurled into the vortex of the great hereafter and stand in the presence of their Creator.

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DISCUSSION.

Dr. Punton: I listened to the report of Dr. Goddard with a great deal of interest. and it seemed to me very remarkable that the Doctor should have so many of these cases under his observation inasmuch as it is a very rare disease. He reports three cases and he also says they all seemed to be very similar in character. Now, glosso-labio-pharyngeal paralysis is a very rare disease, and is rarely seen even by men who have an extensive practice in neurology, and it strikes me very forcibly that the Doctor has made an error in his diagnosis. I think so from the reports he gave us. Now, I have seen two or three cases of this disease and they were entirely different from these that the Doctor presents. There is a marked difference between some of the cases of insanity with more or less disturbances of some of the cranial nerves, and the type of paralytic condition that he speaks of in his paper. It strikes me very forcibly that the Doctor has not given us enough of the history of the cases to warrant the diagnosis which he has made. Now, in glosso-labio-pharyngeal paralysis we find very extensive degeneration of the nuclea of the cranial nerves, especially the motor nerves. While it is a very fatal disease, yet, as a matter of fact, the patients do not die as rapidly as in the cases which the Doctor indicates in his paper. It seems to me he has not made a discriminative diagnosis, and it is very possible that he has made a mistake in his diagnosis.

Dr. Burnett: I listened to the Doctor's paper with some interest, but I must take issue with the extent of his report. When we come to make diagnosis of special forms of palsy we have got to go into it and tell why we depend upon certain features in making our diagnosis. When we deal with bulbar palsy we are dealing with a class of palsy that is exceedingly difficult to diagnose. Bulbar palsy that involves the nerves that supply the throat and tongue does not come on suddenly, unless we have an acute organic condition such as would be caused by hemorrhages or an acute inflammatory condition of some sort. They are slow in their onset: they are insidious, progressive, and attended by intermissions. The pathological condition is one of atrophy of the anterior horn-cells, especially the continuation of the anterior horn-cells up into the upper portion of the nerve structure. I would rather be inclined to think that the Doctor had a condition which was situated higher than the bulb. I think he made mention of the motor tract existing between that and the cortex. I do not remember exactly the words. Of course, that

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would cause symptoms that might arise suddenly and also cause fatal results within a short time. Of these bulbar palsies we have two special types; one is the paralytic type that comes through organic changes and which are characterized by atrophy, and one very distinct feature which is slow in its progress is the peculiar twitching. It is a diagnostic feature that goes with this paralytic condition. The atrophy may not be so apparent in the tongue, but it is present, and it is very often masked by adipose tissue which may be present. Then we have the other type which comes on very much in the same way, but at a different age. The Doctor's cases were pretty well along in age. The true type of bulbar palsy comes on at 48 years and later. The other type will come on earlier. I had the pleasure of seeing one in consultation with Dr. Punton which was 28 years old. It comes on in a way that does not differ very largely, so far as the external manifestations are concerned, from the true bulbar palsy. We have paralysis of the orbicular muscles and extending to the face where the seventh nerve is implicated. But we do not get atrophy; we do not get the peculiar twitching; we do not get the degenerated action from the loss of the reflexes. There is a general neurasthenia. The patient is easily fatigued, but after a few minutes rest he will recuperate. You set the patient down and examine the reflexes and they will be present but on repeated examinations the reflexes will be abolished. But it is the fatigue that abolishes them. It is not an organic condition. The pathological condition behind them is a destruction to those cells in all probability, but we are not just exactly sure what it is; it has not been revealed to us; we do not know, however, that the anterior horn-cells in their continuation up into the bulb have two functions, motor and trophic, and while bulbar paralysis destroys the motor function the other does not, but there seems to be a destruction of the trophic function of that cell. But we are still in doubt as to the exact pathological condition existing behind it. I am inclined to think that the Doctor's paralysis is due to the involvement of the higher centers.

Dr. Goddard: I am very much obliged to the gentlemen for their criticisms. I think they are justified to some extent. I do not know that I am to blame, as Dr. Punton seems to think, because I have seen so many of these cases. A great many people have treated smallpox. I never treated a case of smallpox in my life since I have been practicing medicine, but I would not

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like to say that because I had not and other doctors had, that there was no smallpox. I may have made a mistake, but I drew this line: that this was not bulbar paralysis, but that it was sometimes spoken of as pseudo-glosso-labio-pharyngeal paralysis. The literature upon this subject is very meagre. I cannot find anything except in Hart. He speaks of it as glosso-labio-pharyngeal-paralysis (cerebralis), running down to the medulla oblongata. One case, I admit was a little stretched. I don't think the old man had a fair type of the disease, but in the other two cases the disease came on very peculiarly. They were up and around and suddenly became a little dizzy and began slurring their words. One had difficulty in swallowing. In one case the patient could not speak at all. Neither of them lived twenty-four hours after those two functions were abolished. What was it?

Dr. J. Dillon, of Eureka, read the following paper on "Occipito-Posterior Positions in Labor."

As a medical student I failed to be impressed with the fact that it makes any material difference in which of the four cardinal positions the advancing head presents itself in labor—whether the occiput be anterior or posterior, right or left. Bedford's was the popular obstetric text-book in those days. After devoting a short paragraph each to the right and left occipito-posterior position, in which he pictures in his inimitable way, the presentation, flexion and rotation of the head as it goes sweeping through the strait, he breaks forth in enthusiastic rapture with the exclamation: "How wonderful is nature; how exquisite this mechanism!"

But when I look back over an experience of something more than a quarter of a century I can call to mind more than one occasion when this wonderful mechanism proved a humiliating failure. If the occiput present either right or left posteriorly at the pelvic inlet, in the vast majority of cases it will rotate as it descends and finally emerge anteriorly at the outlet. Out of 1144 posterior presentations recorded by Naegele, failure to rotate occurred in only 17. (Bedford.) Even though rotation occur, labor is more or less complicated and prolonged by the greater distance the occiput must travel in making the rotary sweep necessary to reach the outlet beneath the pubic arch. Not only that, but the initiatory pains are feeble, irregular, and inefficient. The broad bi-parietal diameter is caught and compressed in the narrow sacro-iliac notch, while the narrow bi-temporal diameter of the

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head, being in the roomiest section of the pelvis, moves freely and descends rapidly, thus producing extension and further complication of the difficulty, By this means we may have a brow or face presentation substituted for the original apexial one. While the child's head is flexed with the chin resting upon the manubrium, the force of the pains directed along the longitudinal axis of the body bears directly upon the point of greatest resistance and facilitates progress; but when the frontal resistance is slight or virtually *nil*, and that of the posterior part great, there is a forceful tendency to extension, and when once started it is hard to overcome. The neck no longer acts as a central fulcrum to the head-lever, but is pushed to one side. The head is no longer driven forward, but it is rather dragged through the rest of its journey. The head having entered the pelvis extended, with occiput posterior, spontaneous rotation and restitution in other than an unusually roomy pelvis and small child become practically impossible. The full length of the face must pass under the pubic arch, and the occiput, instead of having to make the short journey of 1½ or 2 inches as when in front, to escape beneath the symphisis, must traverse the five-inch curve of the sacrum and coccyx and an equal distance perineal tissue, or 10 inches in all before it can get into the world without a rupture. Indeed serious lacerations are here the rule to which exceptions are exceeding few. How to manage these cases so as best to conserve the welfare of both mother and child is the question that especially concerns us as accoucheurs. Many doctors give many plans of procedure, but when you have stripped off the husk, cracked the nut and obtained the kernel from them all, it can be summoned up in one word—flexion. Make your diagnosis early, and when you find that the head has entered or is trying to enter, the pelvic strait with the occiput situated posteriorly, secure and maintain flexion, and in the great majority of cases nature will do the rotating and bring the occiput out at the front. If the head has not already entered the strait an effort at bimanual rotation is advisable. If this rotation include the entire body of the child it is likely to be permanent, but if it be secured by simply twisting its neck, we may expect an immediate return to the malposition upon relaxation of the adjusting force.

In his article upon this subject in "An American Text-Book of Obstetrics," Reynolds recommends making the diagnosis some days before the advent of labor and rectifying it by placing the

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woman in the knee-chest position several times daily. Let me quote: "So long as the patient remains in this position, there is a tendency for the child to sag away from the brim under the influence of gravity; and since the recession of the head from the brim leaves the child free to turn upon its own axis, while the presence of the spinal column makes the dorsal side the heavier, there is also a tendency towards a rotation of the fetus as a whole until its dorsum is in apposition to the anterior wall of the uterus."

This is the philosophy and dictum of one high in authority and sounds too pretty to be criticized or questioned; but I cannot refrain. As to this advance diganosis prescience would too often be a first requisite, for in this part of the world the doctor's summons to the bedside of the woman in labor is usually his first knowledge of the existence of pregnancy. Few of us are sufficiently endowed with the gift of prophesy to foretell how the son of man is coming, and the daughter is no less uncertain. Besides, if the wives of 100 physicians were anticipating motherhood and you should meet their husbands on the eve of confinement, how many of them could tell you whether the occiput or sinciput would present in front?

As to the efficacy of the knee-chest position and the force of gravity upon the spinal column of the child in producing the desired rotation, when I am fully convinced that all colts and calves come into the world with their feet pointing to the star in the zenith, I shall be "not only almost, but altogether persuaded."

However, the welfare of both mother and child so much depends upon getting the right start, that I desire to discourage no intelligent effort to secure it. But in spite of these efforts, or from the fact that labor has existed for some time before our arrival at the bedside, we will occasionally find the head well down with the occiput in the hollow of the sacrum and persistently refusing to come forward. This condition is almost always accompanied by more or less extension, and the first indication is to flex the head, for without flexion rotation is virtually impossible, and even with it, very doubtful. In fact, when the head has reached the perineum I have never yet been fortunate enough to secure it; and I am skeptical of its accomplishment at this stage with safety to both mother and child by the most skillful operator, unless the head be small or the pelvis unusually capacious.

Of this condition Penrose says: "If I were asked what one ob-

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stetric difficulty, in my experience, has caused most maternal and fetal deaths, what one had caused most maternal and fetal accidents, not necessarily fatal accidents, often making the rest of life worthless, or still worse than merely worthless, a tragedy —I think I would say, 'Occipito-posterior positions,' where the occiput had rotated in the hollow of the sacrum, and which had been improperly treated."

What then is the proper treatment? To find an answer to this question I have perused all the literature upon the subject accessible. But when the last article was laid down it was with a feeling that there is something yet lacking, which I hope the discussion of this paper may produce.

Flexion from start to finish, seems to be the one thing upon which all authors lay stress and the one thing upon which all are agreed. In addition to preserving flexion, some advise manual effort at rotation, while others counsel leaving the rotation to nature. Curved forceps, straight forceps, and forceps reversed, or applied with the points directed to the occiput, are variously recommended to bring about flexion and rotation. Turning at this late stage has been advised and attempted, but whether ever accomplished or not I am not advised. Even Cæsarian section and embryotomy have been resorted to. But these grave procedures we want to avoid.

The head being well down, with the occiput posterior, and all efforts to change it having failed, how shall we best deliver it? We should remember that when the occiput has traveled the full length of the sacral curve from promontary to apex and the distended perineal tissue beyond to present at the vaginal opening, it has left the womb some ten inches behind; in other words, the child is now practically extra-uterine and beyond the power of that viscus to push it farther. Traction by some means becomes a necessity. We apply the forceps and draw in a direction continuous with the curve of the fetal body, as well as with that of the birth canal and outlet. For the head to pass by this method the whole length of the face must traverse the pubic arch and the perineum must circle the large posterior hemisphere and in its center be stretched away from the symphisis 4½ inches (the occipito-frontal diameter) and finally 5½ inches (occipito-mental), before delivery can be accomplished. If the subpubic arch be too narrow to allow the broad infantile forehead and face to crowd firmly upon the symphisis the above antero-posterior diameter will be increased commensurate with this extra demand for space.

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How often do we find a perineum capable of bearing this great strain? With the average child and average woman is it not unreasonable to expect it? And with a large child and firm maternal tissue the result is almost uniformly disastrous to the mother and hazardous to her child.

The inquiry I desire to make is whether the authorities are not in error in so dogmatically advising the continuance of flexion in the final stage of expulsion. Is it not more rational to produce extreme extension here, push the occiput and apex well back, and by the best means at our command, bring forward the face until the chin has passed from under the pubic arch? With the maternal symphisis thus resting in the anterior hollow of the child's neck the head can be rolled forward and out with comparative ease, and a vast conservation of perineal integrity.

I believe this teaching is not orthodox. In fact, I can call to mind but one writer who has suggested it. Some six or seven years ago, Dr. Frank C. Ferguson, of Indianapolis, in a case of this kind, after an abortive effort at turning, and having his forceps slip twice, and utterly failing to deliver by the usual method, was driven as a last resort to adopt the procedure here suggested, and by which he succeeded.

Even if it prove not the better plan in every case, I think we shall frequently find it to the interest of our patients and our own reputations, after having persistently employed flexion till the head is well advanced with the hope of securing rotation, and failing in this, to now break from the authorities and by extreme extension bring about a face presentation, deliver the chin first, then by drawing the occiput down and forward the head will again flex as it glides into the world with a comparatively free and easy delivery, and the strain upon the perineum will thus be reduced to the minimum.

H. L. Alkire, M.D., Topeka, Kas., read a paper on "Some thoughts Concerning Lens Therapy, With Report of Illustrative Cases."

Mr. President, and members of the Kansas Medical Society: When accepting the invitation of your Secretary of the Ophthalmological Section to prepare a paper for this meeting, I began to think what I could present, as an oculist, that would be of benefit to this learned body, composed largely of active practitioners of general medicine.

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Realizing, that the vastness of the field of medicine and surgery, the desire to become more proficient by limiting the arena of action, does cause many to take up some special line of work; also that the specialist and the general practitioner become so isolated, as to undervalue the assistance each might be to the other; noting the large number of patients consulting the oculist, presenting a history of months or years of suffering, having taken medicinal treatment without obtaining the desired relief; the subsequent history of these patients after being properly fitted with glasses with or without further medical treatment; I feel we might be benefited by the consideration of some thoughts concerning lens therapy.

A practical knowledge of anatomy and physiology will convince any man of judgment that the body is not a simple thing, or machine, composed of a great number of individual parts, which can be intelligently treated separately.

Every doctor should keep in mind a working idea or understanding of the intimate relationship between the organs composing the human body.

Such a knowledge applied, would be beneficial to the patient, useful to the general practitioner and specialist. The surgeon makes a mistake when he thinks general medicine can be of no value to him.

The oculist makes a greater error when he gets the idea that the eye is a little isolated camera by nature made for his special entertainment.

In structure the eye is one of the most complicated organs of the body, one of the most delicate in function, anatomically and physiologically it is more closely associated with the brain than any of the other organs, by some being considered a part of the brain. It is in more constant use than any of the special sense organs. Every tissue in the body, except osseous tissue, is represented in the eye; it is subject to more diseases than any of the organs of the body.

Each eye is placed in the cavity of the orbit operated by seven extrinsic and two intrinsic muscles. These two muscular systems through the 3rd, 4th, 5th and 6th cranial nerves and sympathetic, are supplied with nerve fibres from each of the nervous systems of the body.

In the perfect eye, the refracting apparatus and the two muscular systems work in perfect harmony. Therefore a normal eye may be defined to be an eye composed of normal tissue and

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working in perfect harmony in all its parts and with the eye of the opposite side. An eye having a correct refraction and balanced muscular system, is of a rare occurrence. Especially is it rare in civilized countries, because mode of living, occupation and enviromnents have much to do with the development, strength and condition of the eyes.

General diseases may weaken the muscular system or lower the nerve tone rendering the function of any organ difficult. Especially is this true of the eye.

Errors of refraction usually cause an undue strain upon some part of the muscular apparatus producing an imbalance in the muscular system of the eyes, giving rise to symptoms of asthenopia. If the amount of imperfection (refraction or muscular) is small, and the person endowed with health and strength, the ocular defect may not manifest itself. But, if the possessor of an ocular defect is following some vocation calling for close eye-work, his muscular or nervous system weakened, the optical defect will present itself. This extra strain upon the muscular and nervous system, producing as they do, nerve storms, which may be of sufficient force and frequence to counteract the medical treatment. Not until these patients have been correctly refracted in addition to judicious medical treatment will the patient obtain the desired results.

Many patients come to the oculist, suffering from constitutional or local diseases, are weak, anemic, etc. If he fails to appreciate the fact that the patient possesses organs other than eyes, and that the co-operation of a healthy action of all the organs will aid in correcting the eye trouble, he also fails to do for his patient the things which will give the best result. To illustrate the thought I wish to convey, I ask your patient indulgence while giving a brief report of cases.

Believing a long report of cases, a display of ophthalmic equasions and technique would be tiresome, I will only call attention to two illustrative cases.

Case 1. 1896, Miss P., age 38, complained of frequent sick headaches, pain in temples and occipital region.

History: Six years ago nursed a parent through a long spell of sickness. Since then has had frequent attacks of nervous "prostration," being confined to the bed for several days at a time; is subject to pain in the joints; appetite poor; constipated; usually feels weak and tired. Appearance of physical weakness,

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slightly emaciated and anemic. During past six years has received treatment from different doctors.

Wearing glasses fitted by a *scientific* optician.

Treatment consisted in correcting the errors of refraction.

R. Iron, quinine, strychnine and phosphorus, plain diet, long hours of rest, morning bath of cool water, followed by a brisk rubbing. Massage every second day.

Patient began to improve. At expiration of two months was enjoying perfect health. Has had no sickness of any kind since.

Case 2, 1899, Mrs. C., age 40.

Complained of a constant pain in the back part of head, extending down the spine; could not use eyes for near work, or face bright light. Her family physician treated her for spinal trouble; being unsuccessful he advised her to get a pair of glasses of an optician—saying the optician could properly fit her with glasses.

When this patient came to me, she brought six pair of glasses fitted by this very scientific son of Solomon, who through the daily papers was telling the dear people of his unusual wisdom and great experience.

This patient was given a glass correcting the error of refraction, placed upon iron, quinine, strychnine and belladonna. Reported in two weeks, had pain in head and back one day. Subsequent reports all favorable, no headaches, increasing strength, etc.

DISCUSSION.

Dr. May: I was very much interested in the paper, and consider it a very important question—"Lens Therapy," I believe, was the title. Now, this is undoubtedly one of the most technical parts of the oculist's work. I consider it so, at any rate, and one of the most difficult to do successfully in every case. It requires a great deal of practice and experience to arrive at a proper conclusion, in order to give your patient the proper lens in each case. But I think that we very often, indeed, make the mistake of forgetting that there are other parts of the body that may be at fault, as the Doctor brought it out in his paper. You take a patient who has some error of refraction, and is weak and debilitated from some other disease. You evidently cannot get proper results even if you give the proper lens without correcting the general condition of the system. I believe that some cases can be cured or corrected even without any lens whatever. In some of the milder cases of error of refraction, I think they may be corrected by getting your patient in a good state of health.

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Dr. Alkire: Dr. May's remarks remind me of one thing which we freduently have to contend with, and that is, after having refracted a case, the patient will return in a month, or six weeks, or six months, and inform you that he does not need glasses. Now, the probabilities are that you will find the patient has gained sufficient strength to carry this amount of imbalance which I spoke of in the paper, and no longer needs the aid of correcting glasses. And there is no reason why he should, because in these cases of simple refractive errors, there would be no more reason for requiring the patient to use the glasses permanently, than there would be to expect your patient to take medicines continually after you had once prescribed for him and cured him of his ailment. We use the lens for the purpose of relieving the weakened parts and whenever that has been accomplished, and the parts are strong enough to do the work without the lens, the patient undoubtedly does not need it any longer. It might be well for doctors in general practice to remember this point so that they could rectify any wrong statements that patients may make concerning the need or non-need of glasses. I thank you.

Dr. C. E. Judd, Topeka, Kas., read the following paper on "Variola."

Variola is a specific, contagious and febrile disease, characterized when unmodified, by the appearance in succession upon the cutaneous surface, and occasionally upon the mucous surfaces, of papules, vesicles, pustules, crusts, and cicatrices.

Etiology—The cause is a contagium which is probably an organism. The specific organism has not been discovered, but Dr. Edwin Klebs has discovered a tetracoccus which he thinks is possibly the cause. Later in the disease, when secondary infection is prone to occur, the staphylococcus and streptococcus are also found. This contagium is very tenacious of life and has been known to live two or three years. It is given off from the body in all the excretions and is very abundant during the stage of invasion but is most active when the pus formation is most abundant. Predisposing causes are of no importance. It attacks male and female, old and young alike, but the negro race is more susceptible than the white.

It has been known to attack the fœtus in utero. It is not only contagious but is infectious and is more frequent in winter than in summer.

The period of incubation varies from 10 to 20 days. The pro-

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dromic stage is generally ushered in by a slight chill followed by a temperature of 104-106 with the characteristic pains in the loins, the intense headache, nausea and vomiting. The fever continues for 2 or 3 days and during this time faucial hyperemia and moderate dysphagia are frequent. About the second or third day in some cases, there appears a cutaneous efflorescence called by Hebra—"Variolous Erythema."

This is usually most prominent in the region of the groins, pubes, hypogastrium and inner surfaces of thighs; it is also sometimes found in the axilla. This blush is sometimes slightly elevated but it disappears entirely before the papular eruption occurs. The period of eruption is characterized at first by punctiform subcutaneous discolorations which are only revealed by photography. About the fourth day the eruption of pin-head size and larger solid conical papules occurs on the face and scalp and later appears on the trunk and limbs.

The papules develop for 2 or 3 days and sometimes cover the entire surface of the body; the earlier ones are now transformed into vesicles having a marked umbilication and containing a translucent serum which sometimes changes in 3 or 4 hours into lactescent serum.

Between the 8th and 12th days the lesions are transformed into pustules and the central filament which makes the umbilication is destroyed and that characteristic lesion is lost. During this stage the secondary fever occurs from the formation of the pustules. The infected regions are frequently badly swollen, eyes nearly closed, and the surface may be a mass of disfiguring suppurating pustules. When the pus escapes it forms yellowish or brownish or even blackish crusts. Between the 13th and 14th days desication begins and continues for about 10 days. The resulting cicatrices are slightly depressed and of a lustrous white color and are most distinct on the parts which have been exposed to light as the hands and face.

Typical cases of variola are recognized with ease. It is to be differentiated from syphilis, acne, measles, scarlet fever, pneumonia and varicella.

Varioloform syphilide is to be distinguished by the slowness of its evolution, by the absence of backache and by the fact that the temperature does not fall when the eruption appears. Acne is distinguished by its absence of fever and its chronicity.

In distinguishing measles the important points are—the crescentic character of the eruption, the catarrhal conditions, and

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the continuance of the fever after the efflorescence is completed and the absence of such intense backache.

It is distinguished from scarlet fever by absence of sore throat and especially by the topography of the initial rash which is limited in variola to the lower part of the abdomen and adjacent region and very rarely appears on the face.

It may resemble pneumonia by the suddenness of its invasion, but can easily be distinguished by the absence of physical sign and by the intense backache.

In varicella the trunk usually has the largest number of lesions and frequently this disease is very difficult to distinguish from variola. Some authorities even consider it a mitigated form of variola. Some of the most important distinguishing points in variola are—The relatively fixed limit of the period of invasion, the speedy transformation of the lesions into firm papules, then early appearance on the face and wrists, the limited rash, the variations in the temperature, and the rapid transformation of the papules into umbilicated vesicles.

In typical cases it is frequently very difficult to make a positive diagnosis and one must wait and carefully study the later developments of the particular case. The mortality in unprotected cases is frequently from 40 to 50 per cent. Infants usually die. Weakened vitality from any cause increases the danger. In our recent epidemic, which was of a very mild type, only a few cases died.

Only a few of the more important points of the treatment will be considered: The case should be isolated at the very first suspicion of its being variola. The room should be as bare of furniture, carpets, etc., as possible, and should have a constant free ventilation. The patient should be bathed frequently with antiseptics and all dejecta should be immediately and thoroughly disinfected. No medicine has any power to abort the disease. Good liquid animal diet should be given to keep up the strength as much as possible to be able to withstand the exhaustion of the suppurating stage. Cold water can be given freely and stimulants to meet the indications if needed. Whenever pus has eroded or destroyed the integrity of the papillary layer of the cocium cicatrices will result. The best method to treat this is, first to have all the light in the room come through some dark material, as thick red glass, just as a photographic dark room is lighted. Second, 15 to 20 grs. of hyposulphite of sodium should be administered every 3 or 4 hours. Under this internal treatment the

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vesicles will frequently shrivel before pustulation has begun. Third, the skin of the face should be anointed with vaseline or fresh lard. The principal points of the treatment are isolation and the use of antiseptics.

DISCUSSION.

Dr. Shelley: I should like to ask for information. Is this epidemic which is called smallpox, that is now going through this section of the country, the genuine article, or is it chickenpox, or what is it?

Dr. Reynolds: The possibility has been entertained that this might be chickenpox or that it might be something else, and the foolish idea is responsible for the spread of this disease all over this State. Simply because it does not kill everybody that touches it, it is called chickenpox. The same kind of foolishness is now prevailing in my own town. I have had people stop me on the street and ask if it is the genuine smallpox, and when I told them it was, they did not believe me. I don't have much patience with people who question a diagnosis in that way. It is either smallpox or it is not. I cannot understand how any physician can call it chickenpox when we know that chickenpox almost never attacks an adult. This is a point that is generally overlooked. Because it is mild in type is no warrant for calling it chickenpox. There is nothing else like it. It is smallpox pure and simple.

Dr. Hamill: I have had some experience with this disease. We had seventeen cases of smallpox in our town and there is no doubt it was the true, genuine smallpox.

Dr. Porter: I have sometimes thought that there was such a thing as a disease becoming acclimated, and unquestionably at the rate that smallpox is now going on, it may become acclimated in this State this year. In Pittsburg I think we have as many as 60 cases. In the mining camp of Yale, with a population of perhaps 1,000, mostly colored people, there have been 100 cases. The first seven or eight of those cases followed the regular stage of papulation and vesiculation. The doctor in charge of the work was not satisfied to make a diagnosis. He didn't want to assume the responsibility, and did not, until finally, a severer case, a typical case, though not a confluent one, came up, when they established a quarantine of those people. But it is ineffectual. I was in Yale last week and I met a colored man on

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the street with scabs on him. I would not consider him a suitable subject to turn loose. Now, another patient that I saw there, instead of exfoliating, the eruption after 30 days had something of a fungoid nature. It is a very difficult matter, especially with intelligent people, to quarantine that trouble; it is so mild that they are not afraid of it. It was so ineffective in my county that the board of county commissioners have declared all quarantine off, and every fellow is taking care of himself.

Dr. Thompson: This subject is exciting a great deal of interest throughout our State. It is not only the young physicians who have made mistakes, but older ones as well, who have been in practice for many years. Some have called it chickenpox, and others have refused to make diagnoses at all. In the beginning, I saw a great many cases in Kansas City. I have been through two epidemics of smallpox, and I must confess that only a few of those cases were in any wise similar to the cases we are having this year. I have seen probably two cases of genuine smallpox, but the others I called varioloid. I understand that smallpox is a contagious but not an infectious disease, and in this epidemic, the disease seems to be brought about sporadically. We find a case here and a case there; sometimes a whole community will be infected. That is true of the little village of Quindaro, above Kansas City, Kas. I am really in doubt, Mr. President and gentlemen, as to whether this is genuine smallpox or not. But it is wise and prudent, since it is a contagious disease, to look carefully after it.

Dr. Simonton: Pottawatomie county has had quite an experience with this diaease. Last October the first case came under my observation. I immediataly quarantined it and notified the health authorities of the State. I also notified the secretary that this man had been exposed to the disease in Topeka. I was informed that the disease existed here quite extensively and that it was not smallpox but chickenpox. I kept my case quarantined but the disease broke out in other parts of the country. It multiplied quite rapidly. It was not until January that we could see any change in the number. It may be surprising to you, but it is a fact, nevertheless, that there have been 2000 cases in Pottawatomie county. When ordering a general vaccination, I received notice from several school boards that all their children had had the disease. In Wamego very few had it, no deaths, and there have been in the entire county only five deaths. I don't agree with the last speaker in regard to having any sporadic

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cases, but in every case the contagion could be directly traced. The great trouble was to convince the people that they had something worse to deal with than chickenpox. They persisted in calling it chickenpox. The eruptions very seldom became pustular. Sometimes the disease would abort in the papular stage, and in other cases it would abort in the vesicular stage. Within ten days from the time the eruption appeared the skin would be as smooth as ever except a little papular bump on the skin which would finally disappear and was apt to leave a pit. I am glad to hear that the epidemic is now under control. We are getting the people convinced that we have something more serious than chickenpox to deal with. How this mistake originated and became so widespread, I do not see, but fortunately for us, the cases were very light.

J. E. Hawley, M.D., Burr Oak, Kas., read the following paper on "Gangrene."

The subject selected is one the text books cover as to description in its various phases sufficiently for all purposes, but when we look for directions as to treatment we are left groping, with little offered but a sacrifice of a part as a forlorn hope to a suffering patient. And as we often meet with cases where amputation is not feasible or where conditions are such that we can promise but little, even though they submit to the ordeal of a formidable operation, as, for instance, in gangrene from pressure, or in those cases following protracted fevers, or in glycosuria, and in that form termed senile, it will not be my purpose to take up time with a description of the disease, but to call attention to the results of treatment in a few cases I have seen in practice.

The first case followed an attack of erysipelas in a patient sixty years of age. All the toes of the right foot, a portion of the heel, and about one-half of the soft parts of the foot were lost. Owing to the condition of the patient amputation was deemed out of the question, and a consultation decided to let him die a natural death, which he did after ten years of fairly good health. The treatment in the case was the old "yeast and charcoal" treatment with tonics and whisky.

Case 2—Mrs. W., gangrene of soft parts of sacral region, following typhoid fever. Size of slough 3x6 inches, including several small pieces of sacral bone. Recovery. Wound healed by granulation.

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Case 3—Traumatic gangrene of entire foot and soft parts of ankle as the result of being cut and bruised by stalk cutter. Amputation at lower third of leg.

Case 4—is the one to which I desire to call special attention, as it is of that rare type, complicated with conditions which make amputation uncertain and place the surgeon at his wits end to devise a course of treatment that will safely carry his patient through. Mrs. B., aged 64, first complained of pain and numbness in her lower limbs with edema of feet and legs. Many varicose veins extending above the knees; suffered with rheumatism and trouble with her heart for years. When called, in February, 1899, found a mummified spot on the top of right foot extending from small toe one and one-half inches up the foot, balance of the foot congested and swollen; suffering with severe pains in the foot and leg; left foot in similar condition, with black spot on the heel. Urinalysis showed both sugar and albumen. Heart weak, irregular and a distinct murmur. Bowels constipated and no desire for food. Patient unable to rest at nights on account of the constant pain.

I found that I was like a mariner on an unknown sea, and could find but little encouragement by consulting Holmes, Wyeth, Dennis or Gross, and found that Pott, in the last century, had told us about all that we know of senile gangrene. In this case amputation of the legs was not to be thought of owing to the existing conditions, and I at once tried to overcome the trouble with the kidneys, as there seemed to be the cause of the gangrene. By the aid of antipyrine and codein, and a tonic of pepsin quinine, iron and strychnine, the sugar and albumen soon disappeared, the general health improved, and, after a two months siege, I had the satisfaction of seeing my patient able to again use her feet, and enjoy fairly good health through the summer months, but on the return of cold weather last fall, the conditions returned with an increase of all the symptoms accompanying the former attack. I at once put her upon the same line of treatment and was able to control the gangrene in proportion as I was able to hold in check the formation of sugar and albumen in the urine. Dr. O. W. Hughes, of Jewell, was called to assist in an amputation if thought feasible, but after weighing all the conditions, we decided to trust to removing the dead parts as fast as the line of demarcation formed, and hope for a more opportune time for a radical operation. At this time I resorted to a remedy which I wish to call special attention to,

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one possessing more merit than any other that I have ever tried, and meeting all the indications of a deodorant, dissolvent, and antiseptic. That drug is hydrogen peroxide. It was used diluted, at first one-half, after a few trials, full strength. Under its use the dead parts rapidly dissolved and the offensive smell soon disappeared, the septic fever at once declined, lines of demarcation rapidly formed, and amputation of two toes and a considerable portion of the soft parts of the right foot was resorted to. From that time to the present the case has progressed so far that the patient is now able to move about with the aid of a cane the wounds are healed by granulation under a dry boracic acid dressing, leaving not a pretty but a firm cicatrice. The sugar and albumen have ceased to be excreted, the dropsical condition has disappeared, the heart is doing its work fairly well, digestion is good, sleep normal and everything looks favorable to the cessation of the apparent causes of the gangrene. And antipyrine, codein, hydrogen peroxide and boracic acid have proven themselves powerful weapons with which to fight that dread disease, senile gangrene.

DISCUSSION.

Dr. Jackson: I want to discuss a few points with reference to special forms of gangrene. I shall not touch at all upon those forms which are due to trophic disturbances, or constitutional taints, but I want to make a few remarks with reference to those forms of gangrene due to traumatism and acute septic infection, because after an experience of some years, and a number of cases, I have come to some conclusions with reference to this particular form of gangrene which I think are valuable. Many of you have had a great deal of experience in railroad surgery and have come in contact with wounds in which there have been a great deal of contusion and laceration, where formerly we were accustomed to have traumatic gangrene. This gangrene was supposedly due, primarily, to injury of the blood vessels, that is, an interruption of the flow of blood to the parts; but I am convinced after experience with a great number of cases that became gangrenous, that they became so inexcusably; in other words, I am satisfied that, in a great number of instances, the disturbance of the circulation is not primarily due to the injury. I believe that we have many cases of gangrene in which, if we were to study pathologically sections of the blood vessels themselves, we should find the vascular channels completely free from pathological derangement. But we find that there had been a sufficient degree

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of damage done to the surrounding capillaries that had caused a very considerable degree of contusion to take place in the perivascular spaces, and the result is that these blood vessels, while they are not destroyed, are compressed from the outside by mechanical obstruction. In this class of cases there is no excuse in the world for gangrene supervening where proper treatment is given. I will tell you an instance that will illustrate my meaning. Some years ago a man came into my office whose fingers had been crushed in a printing press. A neighboring surgeon to whom he had first gone, told him that the fingers would have to be amputated. He refused to consent to the amputation. I saw him in the neighborhood of 24 hours afterwards, and at that time his fingers were certainly in a most unpromising condition. I told the young man that he would probably have to lose all four fingers, but he still persisted that he did not want to have them taken off. He asked me if I would agree to attempt to save his fingers and I undertook to do so. The treatment was simply this: The first thing I did was to cut open the stitches that had been taken in the wounds. I left four wide openings into the perivascular spaces so that drainage could be established. I put this young man's hand at once into water as hot as he could bear it. The hand was kept in hot water continuously night and day for seven days and seven nights. By that time the condition had so far improved that I was able to discontinue the immersion at night, but still kept it up in the day time; the result was that at the end of nine days the nutrition of every one of those fingers was perfectly restored, and I saved to the boy, not only parts of the four fingers, but I saved every single digit of those four fingers. That illustrated to me what could be done in those cases by the use of hot water. The principle, I take it, to be this: If we apply a hot iron or hot water to the surface of the skin, we notice that a blister forms. This means that the serum from the surrounding lymph in the perivascular spaces has been, by the action of the heat, diverted toward the point of application. In other words, the heat has simply reversed the lymph flow. We forcibly drain out all this perivascular lymph and the result is, that the arteries, instead of being compressed from the outside are relieved from this mechanical obstruction. If we make thorough provision for drainage, and then put the member into hot water, we can be absolutely sure that if there is any possibility of saving it, we shall do so in this way.

Dr. Latta: I want to add a word in corroboration of the value

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of hot water. Ericson long ago pointed out the value of this form of treatment. It is remarkable to me the amount of good you can get by the use of hot water when there is no external wound at all. I have never found a more valuable remedy when there is no external wound than the application of hot water.

Dr. Minney: I like the explanation given by Dr. Jackson, but I believe that he has not said all that might be said. The outward flow that he describes is one thing, but in addition to promoting that, the temperature of the water prevents the development of poison. In other words, the poison does not grow rapidly. It is not a proper soil for it to develop in. Another reason, I think is, that the parts are frequently dead, and the nerves connot enérgize them. Heat is simply a mode of force, and when the vital forces are lacking, we supply them by this extra heat. So I think it is not all due to the outward flow. But we have these two other factors in our favor. I began the use of hot water in the treatment of disease when I came to Topeka fifteen years ago, although my instruction had been to the contrary. I was taught to use ice and ice water, anything that was cold. I was led to adopt the heat treatment by a conversation I had with Dr. Stormont many years ago, and I have pursued it in the main ever since, and have had excellent results from it.

Dr. Boyle: I just want to add one word to what has been said You cannot always tell what will cure some of these cases of gangrene. I had a case of senile gangrene in the dry form about thirteen years ago. The patient absolutely refused to have an operation. I had been taught to use iodoform freely, bichloride and hot water applications. I applied these remedies frequently and from day to day I removed the necrosed tissue, and finally adopted the hot water treatment night and day. The dead tissue was removed, and the old gentleman lived more than a year afterwards. Another case, which I saw in consultation, was an old lady 76 years old living in Baldwin City. She had developed gangrene and my *confrere* advised amputation; but she simply refused to listen to anything of the kind. Two days later my *confrere* told me they had taken the case out of his hands and that they had used a poultice of bovine fæces, and she is well today. Now, whether it was *post hoc* or *propter hoc*, I don't know.

Dr. Leslie: At a meeting of the American Medical Association in New York City, 20 years ago, I heard this subject of hot water discussed for the first time, and it impressed itself strongly upon

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my mind. Shortly afterwards, I had a case of a young man whose hand and arm had been caught and crushed in the splitter in a tannery. I thought, of course, we should have to amputate, but the young man said, don't do it. Then I thought of what I had heard in New York in regard to this hot water treatment, and I washed it thoroughly with hot water. I made a splint by which I could hold the bones in place, and then we applied the hot applications night and day, I do not know how many days, and he made a perfect recovery. I think it was a remarkable case, and I have since that time used hot water in all contused or punctured wounds. In another case, a boy while running fell and struck his hand on two rusty nails, I put his hand in hot water for two days; he had no swelling, no pain, and no bad results whatever.

Dr. Moore: The case spoken of was a man between 70 and 80 years. He developed gangrene of the second toe and afterwards all the toes became involved. The odor became so unbearable that he had to be removed from the infirmary to an outside building. He was very feeble and decrepit. I endeavored to amputate early in the case, but he refused it until the pain became unbearable; so I took off the foot between the ankle and the knee. He had a good recovery and is living today. This was something over a year ago.

Dr. Hawley: I will say in addition to what I said in reference to the treatment of gangrene, that I have always used hot water and in this case, which I reported, I used hydrogen peroxide hot, and at the same time kept the foot lying on a hot water bottle filled with hot water most of the time. But the point which I wish especially to bring out is the relationship existing between organic troubles of the kidneys and heart and senile gangrene. As to traumatic gangrene, there can be no doubt. We are all agreed upon that. There is no question that if we have an injury of a part that destroys the circulation of that part, it is bound to die if we cannot restore it. But in these cases, where we have these troubles of the kidneys—where the kidneys are throwing off both sugar and albumen, as I think we always find in these cases of senile gangrene, we have just exactly the condition that is presented to us today in tuberculosis. We simply have death of a part from lack of sufficient nutrition carried to it to keep it alive. In senile gangrene, it is the extremities that suffer. Now I don't wish to place myself here in an attitude of antagonism to our authorities upon that question, that it is a disease

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directly of the blood vessels, but my experience is that the condition of the blood vessels is secondary that the primary cause is the kidneys. If we find no sugar or albumen, then we can go ahead with the local treatment; but if we find upon analysis of the urine that we have sugar or albumen, it would be foolish to think of amputation, because we know what the result would be. We should simply hasten the death of a patient.

Flavel B. Tiffany, M.D., Kansas City, Mo., read the following paper on "The Relation Between the Eye and the Nervous System."

Mr. President and Gentlemen of the State Medical Society of Kansas: I wish to state before reading this paper that it is not entirely original, but gleanings from my practical work with Prof. Schaefer in his laboratory at London, making localizations by experimenting on monkeys; also from several text books, such as Norris and Knies, Swanzy, Gray, Fuchs, and from my own note books of cases.

Very frequently diseases of the nervous system, especially those of the cephalon, cause diseases of the eye, but quite as often it is the case that diseases of the eye cause diseases of the nervous system. It is very essential that the oculist understand not only diseases of the eye, but those of the nervous system as well as all other affections of the body.

Anemia of the Brain.—May often be recognized by the vascular appearance of the retina, as the brain, meninges and retina get their blood supply from the same arteries, viz., the internal carotid. However, this appearance is not to be relied upon in all cases, as we may have a diminution of blood or an increased amount to the retina with an opposite condition of the brain we have contracted pupils, in anemia of the brain the pupils may be dilated and sluggish.

Cerebral Hemorrhages.—Hemiplegia, hemianesthesia, with or without aphonia, occasionally happens in the visual field opposite to the side of the hemorrhage. This is probably due to irritation of the opposite hemisphere. Hemianopsia is a frequent symptom in cerebral hemorrhage, in fact sudden homonymous hemianopsia is usually about the only eye symptom of cerebral hemorrhage. If there is hemiopic reaction of the pupils, the lesion is to be located within the optic tract, or primary optic ganglia. If the pupils react normally the lesion is usually in

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Gratiolet's fibers. In all cases of homonymous hemianopsia the hemorrhage must be very small. If the blood enters the sheath of the optic nerve it may be made visible as a choked disc and accompanied by a dilated pupil. Hutchinson finds in at least one-half of his cases of cerebral hemorrhage that there is rigid mydriasis on the side of the lesion. Meningial hemorrhage usually gives rise to mydriasis of the same side. Occasionally it is bilaterial. If the extravasation takes place into the ventricles, then mydriasis becomes a striking symptom, due probably to irritation of the sphincter nucleus. Symmetrical hemorrhage may occur, producing binocular blindness with atrophy of the nerves. Complete or partial atrophy of the nerves takes place when the hemorrhage has destroyed the primary optic ganglia, tractus chiasm or optic tract. Hemorrhages of the conjunctiva in old people bespeaks of hemorrhages in the brain.

Embolism produces like, if not the same symptoms, as hemorrhages and if it is infectious it may cause abscess of the brain. Thrombosis of the cavernous sinus if infectious presents symptoms of cerebral abscess, with swelling of the lids, proptosis, dilated and rigid pupils, blindness, insensibility of the conjunctiva and cornea, and ulcerations of the cornea.

In abscess of the brain, first the zone embracing the suppuration gives rise to irritation, later on to paralysis. Choked disc is frequently found. The most frequent finding is optic neuritis, and as a rule this is bilateral although more marked on one side. If it is unilateral it is usually on the same side with the abscess, and the latter is frequently in the front part of the brain in the frontal or temporal lobe. This may follow otitis media purulenta. If the abscess is at the base of the brain we may expect edema of the lids, proptosis, pain and photophobia, ever prior to perforation, Suppuration of the ear is one of the most frequent causes of abscess of the brain; emboli are the most frequent foci. About 33 per cent. of these are found in the cerebellum. In embolus, ptosis is a frequent symptom and points to the cortical region. If perforation takes place into the ventricles we usually get extreme myosis because of the direct irritation of the sphincter nuclei.

In tumors, if they are of a chronic, slow growth, they may push the parts aside without causing much if any irritation or paralysis, and there may be little if any ophthalmoscopic findings; but if the tumor is of a rapid growth, certain nuclei or ganglia are involved giving raise to ophthalmoscopic symptoms: one of the

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most frequent being paralysis of the ocular muscles, especially of the abducens. The abducens nerve seems to be especially involved because of its long course within the cranium. If the tumor is at the chiasm, unilateral and occasionally bilateral enophthalmus results; this is because of pressure on the cavernous sinus and thalmic veins; here is present optic neuritis which finally passes into atrophy of the optic nerve; thrombosis of the veins of the orbit and retina may also be produced. If the tractus chiasm or the optic nerve are directly implicated there follows atrophy of the optic nerve, seen by the ophthalmoscope. Choked disc is one of the most important signs of a tumor, it comes on suddenly, and there is a rapid swelling of the papilla, increasing to double or treble its normal diameter, projecting into the interior of the eye, and then follows a difference of refraction from the normal amounting to four or five dioptres of hypermetropia. The border of the elevation often has a violet color, and at a later stage the disc recedes slightly. As time goes on the disc flattens to its original size and becomes atrophied (white atrophy); frequently there is a ring of pigment surrounding it, marking the boundary of its previous swollen and inflamed condition. Choked disc is usually bilateral; when unilateral it is situated on the same side with the tumor. In tumors of the brain there is frequently seen p. m. an ampulliform swelling of the optic nerve just back of the sclera, being due to accumulation of the fluid within the sheath of the optic nerve. Choked disc is usually due to fluid entering the subdural and subpial spaces of the optic nerve, and this compresses the intraocular extremity of the optic nerve; or it may be due to dropsy of the cerebral ventricles. There is always an edema of the intra ocular end of the nerve, even though there is no inflammation. Pure choked disc, or simple edema of the ocular end, need not cause disturbance of vision. There is a centripital current of fluid from the eye to the brain through the nerve and its sheaths, and to develop choked disc requires only stagnation, the transport of fluid from the cranial cavity not even being necessary. However, it usually takes place. It does not of itself cause loss of vision and may disappear without leaving any trace, but this does not occur of course in tumors, as a cause; for as the tumors develop the fluid enters the vaginal sheaths of the ampulla and inflammation follows, and finally atrophy of the nerve. When other symptoms are observed the existence of double choked disc renders the diagnosis of cerebral tumor very probable. Tumors of the eye

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sometimes grow along the optic nerve into the brain, especially is this true of gliomas.

In meningitis the eye is more or less involved; among the symptoms we have hyperesthesia, photophobia, pupils dilated and sluggish. If the inflammation is at the cortex double blindness may follow with retention or reaction of the pupils, there may be conjugate deviation of the eyes. Disturbance of vision is usually due to inflammation at the base of the brain (basilar meningitis). In basilar meningitis the abducens motor oculi, trochlearis and facial nerves are involved, especially if the chiasm is implicated. The abducens is the most often attacked. In tubercular meningitis the pupils are dilated and sluggish. Nystagmus is not unfrequent. Anesthesia of the cornea occasionally occurs which may develop neuro-paralytic keratitis. Occasionally the optic nerve is implicated in the inflammation and there is an inflammatory infiltration within the nerve sheath and we have at the disc a real picture of acute optic neuritis. If the optic nerve tissues are cloudy this is an evidence of inflammation and not merely of hyperemia. Later the disc atrophies and becomes chalky white, typical of pachy-meningitis. In either case the optic nerve shows an increase in connective tissue with great loss of nerve fibers. Optic neuritis in meningitis is usually bilateral. In meningitis the vision is more or less impaired, there are scotomata, especially for colors with narrowing of the field. Complete restoration is rare, often loss of hearing coexists. In purulent meningitis the inflammation frequently extends to the orbit; we then have chemosis, may have proptosis, edema of the lids with ptosis, etc., occasionally cyclitis developes, going on to suppuration producing hypopyon with panophthalmitis. Such casualties are usually unilateral. Purulent inflammation of the eye may be the starting point for metastatic purulent meningitis. In such a case the eye should be removed at once. If meningitis goes on, it does not follow that it is due to the operation, but rather that the operation was made too late. There have been several fatal cases of meningitis published as occuring after the operation of enucleation evidencing, as said, too late an operation. Conjunctival catarrh is very frequent in the epidemic form of the cerebro-spinal meningitis. In tubercular meningitis we not infrequently have hippus, myosis, then mydriasis, alternating; occasionally it is observed that the pupil is dilated ad maximum when the patient sits up, but contracts when lying down. In chronic hydroceph-

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alus we frequently get from the pressure choked disc, usually bilateral, terminating in atrophy and blindness.

DISCUSSION.

Dr. Minney: I used to think I knew a great deal more than I do now; that I could diagnose general diseases of the nervous system more readily ten years ago than I can now. It is true that the ophthalmoscope will show us indications, and it is true also that in the examination of the eye there are certain indications making us believe that there is some central lesion; but, gentlemen, there is not so much in it as I used to think there was. Now, do not understand me to say that examination is useless; but I have found that general diseases frequently affect the eye, and come on secondarily. Very seldom, indeed, does eye trouble cause any general disease. I have found in cases where the nervous system has been particularly involved that we have very serious eye troubles, and when we get Bright's disease, and other general diseases, sometimes the eye will show it first; but as I understand this paper diseases of the eye are also attributable to the nervous system. I think we must have the general symptoms, and the history of the case in order to prove of very great value. Indeed, there are not so many indications as we would at first think. Now, remember, I am confining it wholly to diseases of the nervous system as shown by the eye. I confess I know very little about it; there are others here better qualified to discuss the paper than I. But the paper is worthy of discussion and I am glad the doctor has presented it. I am pleased with it.

Dr. Punton: The paper which Dr. Tiffany has read to us tonight is one of great interest to me, and deals with a problem in neurology which I think transcends in importance any other which he might have selected. So far as the subject-matter of the paper is concerned, it deals entirely with the anatomy and physiology of the nuclei of the cranial nerves, and especially the optic. I think that as evidence of diseases of the nervous system it is simply confirmatory evidence; taken alone it is not of very much value, but associated with other symptoms, it is an exceedingly important factor. I think the trend of modern science is to associate symptoms with lesions, and when we can do this we are masters of the situation. Now, in all diagnoses of brain lesions, we have two problems before us: One is the seat of the disease, and the other is the nature and character of it. By the symptoms we are enabled to locate the lesion, and when symp-

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toms of these lesions come on, together with the facts in the history of the case, they help us very materially in determining the second problem, namely, the nature of the lesion. Now, we find the anatomy and physiology gone over very carefully in this paper and if we have them well in mind, then the diagnosis of any of these intricate lesions in connection with the brain are simply reduced to a matter of logical deduction, but without them it is exceedingly difficult to make a diagnosis. This is a very important subject, and the Doctor deserves credit for having presented it so ably.

Dr. Alkire: I enjoyed the Doctor's paper very much, because I think it deals with a very important subject. I don't believe we know very much about the subject. But I am convinced of this fact, after studying the anatomy and physiology of the brain and eye for many years, that the eye is a most useful index in considering disturbances of the central nervous system. According to some of our modern investigators, the eye is as much a part of the brain as the medulla, the pons or any other portion of the brain within the cranial cavity. If we will take the eye as an index to the nervous system, and consider not only the bulb, the eye itself, but the muscles which operate the eye, and then consider the fact that we have more nerves going to this organ than to any other organ of the body; and when we consider the source of blood supply to the eye; and when we consider the anatomical relation which the eye bears to the brain and to the nervous system within the cranial cavity, and consider its physiology, I maintain that it is a most useful index in determining diseased conditions of the central nervous system. I think it necessary for the oculist and neurologist both to thoroughly understand the anatomical relation which exists between these two organs; and if we study the course of the nerve fibres which pass from the cerebral centers, or the centers within the brain to the eye, we find that we have opened up a field which contains an endless number of problems, and I think if we will consider this from a scientific standpoint, and endeavor to follow more carefully the course of the nerve fibres which pass from their respective centers in the brain to their terminals in the eye, we would have a far more intelligent understanding of the use of this organ in diagnosing diseased conditions of the system. And the more we come to study the course of those nerve fibres, the more complicated we find them; the more we find that there are many points about them which are not yet made clear; but I do

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believe they will be made clear, and very useful to us in the future if we will only carefully study these problems. I can assure each and every one of you that if you will master the minute anatomy of the nervous system as related to this part of the body, you will find you have a very large field to cover and a great many difficult problems with which to deal; but I believe you will agree with me that all of these problems are plain when you come to understand thoroughly the anatomy and physiology of the parts under consideration.

A. H. Cordier, M.D., Kansas City, Mo., read the folowing paper on "Tubercular Peritonitis."

There are a great many demonstrable truths in surgery and medicine, and other facts that are plainly to be seen, yet a satisfactory explanation of the manifested phenomena have never been discovered. In 1888 Sir Spencer Wells recalled a case upon which he had performed a laparotomy, twenty three years prior to the date, for tubercular peritonitis—the case had remained well up to that time.

The explanation of how these cases are cured by a peritoneal opening are many, but none have been satisfactory, hence I trust I may be pardoned if I add another to the list which to me as far as I have been informed, is original.

Before discussing that phase of the subject I desire to call attention to some pathologic and clinical traits of the disease. The bacilli of tuberculosis is killed by sun rays quickly. This bacilli is nonmotile, hence we must look for its wide dissemination over the peritoneum in some fluid within that cavity or from the extensive vermicular movement of the intestines or from blood dissemination.

It would seem from our findings in most of these cases that there was not a local focci from which the disease spread or if so that focci was overshadowed by the later and more widespread process. The nodules have been about equally distributed all over peritoneum in most of my cases, both visceral and parietal. Inoculation experiments have demonstrated the extreme susceptibility of the peritoneum to tubercular invasion. This membrane can resist the inroads of most any of the pus microbes better than the tubercular bacilli.

Most of my cases have been in females, and as the anatomical conditions are the same in both sexes except the opening into the Fallopian tubes, this would indicate a causative factor situated

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at this point. This I believe to be true. In quite a percentage of the diseased tubes removed by myself there has been a tubercular disease of these ducts, yet a remarkable fact none of my tubercular diseased Fallopian tube cases had a perceptible peritoneal invasion at the time of operation. This would seemingly negative the tubes as a source of a general pertioneal infection. The resistance of this membrane may be increased by the presence of the usual pelvic inflammatory accompaniment in tubercular diseased tubes. In fact some of these cases are so completely walled in that they kill themselves, like yeast, by their own work. At the same time an antitoxine is produced in this Fallopian laboratory that may act as a constitutional bar to farther invasion. A species of constitutional and local immunity is thus induced.

A primary tubercular peritonitis may be induced by the presence of tubercular bacilli in the blood, the bacilli being lodged in capillaries on surface of peritoneum. A remarkable immunity of other organs of body must exist in these cases as many subjects of tubercular peritonitis are entirely free from pulmonary or other complications. This freedom from constitutional invasion may be explained by the more or less complete walling in of every little point of infection by the building of a tubercle by which the bacilli are isolated. This coagulation necrosis will not supply nutriment to the bacilli, hence many nodules are sterile, and this may be one of the methods of nature's cures. The cheesy masses in may or may not contain living bacilli, but most of them at an early date contain spores capable of reproduction if planted in sterile soil.

These tubercule of the peritoneum may, after undergoing this cheesy change, be robbed of their moisture and ultimately become calcarious masses, enclosed by a layer of dense connective tissue.

It is universally admitted that the tubercular bacilli are not pyogenic or pus-producing germs. The liquid, turbid or otherwise in tubercular so-called abscesses, is not purulent unless a mixed infection be present.

As a result of the intense hyperemia and blood stasis of the peritoneum, red corpuscles as well as the white may escape from the vessels, in that event the fluid becomes sero-sangulent; hence in any cases of tubercular peritonitis the peritoneal fluid is bloody in character. This is usually an evidence of an active, or recently active stage of the disease. The absorptive powers of the

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peritoneum are in a measure in abeyance during this acute stage. The lymphatics are more or less compressed and blocked by the escaped blood cells. The withdrawal of the fluid by a laparotomy relieves these conditions that interfere with free absorption and thus acts as a stimulus to the absorbents to renewed activity.

In those cases in which there exists a large collection of fluid the intestines are usually free from adhesions and are the most amenable to treatment, surgically. The amount of fluid may vary from a few ounces to several gallons.

In many cases no fluid is found in the peritoneum. As a result of the outpouring of the white corpuscles and serum a false membrane is formed on peritoneum; this becomes organized and cements the intestinal coils together.

The fluid in the dry or fibrino-plastic variety is absorbed, thus permitting the intestinal coils to come in contact and thus become adhered, which in many cases produce intestinal obstruction or other obstructive symptoms as of ureter, gall-duct, etc. These cases are the hardest to deal with surgically at time of operating and promise less in as far as concerns a cure.

In one of my cases, a young man (W), the fluid was like mucilage in consistency and brown in color, coagulating on exposure to the air. On first sight (the same being in an active stage) I thought I had to deal with an acute general infective peritonitis. This case made a perfect and permanent recovery. Three years now since the operation.

A conflict is waged between the various forms of bacteria and the white corpuscles, as a result of this warfare the fibrin coagulates and the exudate becomes more or less solidified or, if on the surface of a serous or mucous membrane, a false membrane is formed, the same may become organized tissue through the projection of blood vessels into the same. An adhesion thus formed may become a very serious complication of the original disease, while on the other hand, it becomes a conservator of life by preventing the ever-present myriads of bacteria in the intestines from escaping into the general peritoneum in case of a fistula-bi-mucosa. In many cases the disease is not accompanied by any constitutional or other foci of infection symptoms. One author says that in 30 to 40 per cent of peritoneal tuberculosis the Fallopian tubes are affected; this has not been my experience only in as far as concerns the surface of the tubes; I have found

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the nodules on tubal peritoneum the same as on the intestinal or parietal layers.

The pleura is more frequently the other structure involved when the disease is located elsewhere. Miss S., age 24, had usual symptoms of acute tubercular peritonitis, pain, tenderness, ascitis, etc., with this the pleura became involved and filled with bloody fluid. The peritoneum was opened and drained. The pleura was not aspirated. She made a good symptomatic recovery and was seeming well one year later.

The small multiple nodules of a widely disseminated cancer of peritoneum may lead to an error at time of operation, but a close scrutiny of all other organs will usually disclose a larger growth. The ascitis as a rule in tubercular peritonitis is not as great as in cancer and the fluid is not as likely to be bloody in character.

An omental tumor sometimes developes from this process by a slow rolling up of the omentum until it makes an oblong mass across the upper abdomen. This condition may easiiy be confounded with peritoneal cancer. This form of the disease usually has little or no liquid in the cavity.

The agglutination of coils of intestines may make a solid mass, feeling to the palpating hand like some form of tumor. A careful auscultatory and manual examination will detect intestinal sounds and movements into and through the mass.

In the disease known as tabes mesenterica the peritoneum is frequently the origin of the glandular infection, but in the great majority of these cases the infective area is within the bowel. Coils of adherent bowels may be diagnosed as enlarged mesenteric glands even at time of operating unless a careful and experienced examination is made at time of operating. An intestinal ulcer may be found as the origin of the enlarged mesenteric glands.

The omentum may retain its normal position and yet be extensively involved. As a rule, however, it soon adheres to some infected point and forms a mass of greater or less dimensions. It may wind upon itself and form a roll across the upper abdomen at lower border of transverse colon or stomach and lead to an error in diagnosis of malignancy of these organs.

Mesenteric glandular disease (tubercular) may lead to an infection of general peritoneum by breaking down the glands.

Pain, while of frequent occurrence in these cases, is absent in many. The pains in my cases have been those simulating gaseous intestinal colic, coming on at irregular intervals, extending

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over a period of months. This class of pains have usually been in a measure relieved by a free bowel movement. The cause of these pains is the tension produced by the gas on the constricting tubercular hyperemic peritoneal coat of the intestine.

In some cases the pain has acute exacerbations, accompanied by tenderness and increased raise in temperature, indicating an acute or active stage of the diseases. In fact, simulating an acute septic type of peritonitis, such as might extend from an appendictiis, yet not accompanied by the usual severe constitutional manifestations of the latter disease.

The temperature may remain subnormal for weeks at a time yet in the majority of instances the temperature is elevated at some time during the twenty-four hours.

Discoloration of skin about face and breast is of common occurrence and is due to action on the sympathetic nervous system. It has no special significance in diagnosis.

The temperature curve is a decidedly variable one, ranging from a subnormal morning temperature to 103 degrees or higher in the afternoon. On the other hand, the temperature and pulse may be such as to lead to the erroneous diagnosis of typhoid or malarial fever. A careful blood examination for the agglutination test of Waydal, or the detection of the plasmodium of Lavern, would aid in eliminating these two misleaders. The presence of ascitic fluid, general uneasiness or tenderness over abdomen, and the protractedness of the attack favoring the diagnosis of tubercular peritonitis.

A careful physicial examination eliminates pregnancy, ovarian cyst, etc.

The general health in the ascistic type of the disease may not be much impaired in the beginning. In fact in some cases the patient may take on weight and become very fleshy. I have lately operated a case in a married woman, 28 years of age, who two years ago weighed only 116 pounds, who at time of operating weighed 220, and was in appearance in good health; she had an elevation of two degrees in temperature and pulse of 90. Pains, colic in character, every few days, with exacerbations of acute symptoms of pain and tenderness, the attacks usually putting her in bed a week or ten days. At operation I found the peritoneum studded with milliary nodules and the cavity filled with a sero-sanguolent fluid. She had quite an acute attack, following the operation, lasting ten days. This subsided and her recovery from the operation was not farther interrupted. It remains to be seen as to the cure of the disease in this case.

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Unless encysted the fluid gravitates to deepest part of cavity with change of patient's position.

The saculated variety may cause an error in diagnosis, the mistake usually made being that of ovarian cyst. A proper recognition of the pedicle or "diagnostic point" and location of dullness will prevent this error in most cases.

The local point of all abdominal diagnosis should be reached by excluding other probable sources of symptom-producing pathology, as cancer of liver, spleen, kidney diseases, organic diseases of heart, etc., all producers of abdominal dropsy.

Painful micturition is mentioned by many writers as a prominent symptom without giving any definite explanation as to its cause. While this symptom has been present in two or three of my cases, it was not a marked feature in these cases.

Where a doubt exists in the mind of the surgeon as to the cause being one of tubercular peritonitis a small amount of the fluid may be collected quickly and in a safe manner with a hypodermic syringe and inoculation practiced on guinea pigs. All fluids in this disease do not have the bacilli, but in some they are present in abundant numbers. In such a case the diagnosis may be made absolute. This diagnosis test will often show presence of bacilli when the microscope has failed to show their presence, as in the case in the urine in tuberculosis of kidney.

My cases have been mostly in females between twenty and thirty years of age. None of my cases have been in the negro race, yet it is claimed that they are very prone to this form of tubercular disease. The absence of symptoms and the presence of seemingly good bodily nourishment are misleading and often prevent an early diagnosis. In two of my cases the disease was discovered after opening the peritoneum for the removal of an ovarian cyst. A recovery ensued in both cases, the patients have since remained well.

Typhoid fever is the one disease most likely to mislead, but a careful analysis of the presented symptoms will usually enable the physician to determine the actual disease present. The cases in which there is much fluid do not suffer very much unless in the very acute or active state of the disease.

In the chronic variety diarrhea is a very prominent symptom and usually is due to ulceration of bowels and are unfavorable cases. The dry cases are not benefited as often as the ascitic variety by surgical procedures, yet a careful separation of the adherent bowel will bring relief in many cases from symptoms, and

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in a few a cure will be affected. Tubercular family history is common in many cases, but not with a frequency to be of much value alone as a diagnostic helper.

Vague abdominal pains with no explainable cause, accompanied by irregular febrile attacks and a gradual loss in weight, with an increase in size of abdomen, are of much value. Yet it must not be forgotten that many of these patients are well nourished.

Pain has not been a marked feature in my cases. The suffering has been from gaseous distension of bowels and the consequent stretching of its coats, or to the adherent intestines being impeded in their vermicular movements and rubbing of surfaces infected. Colic pains.

Any pathological process operated on that symptomatically disappears and remains so should be considered a cure. If the disease be a constitutional one and local distant pointsbecomes invaded it may not be a cure in true sense of the word, yet if the point at which the original operation was performed remains well, the surgery should be considered successful. If a tubercular peritonitis is cured by a laparotomy and the patient dies three or four years after from pulmonary tuberculosis, this fact should not be used as an argument against the justifiability of the surgery.

Weir has reported a number of very interesting cases coming under his care, one case is a childin which the parietal peritoneum wrs filled with tubercular nodules, the membrane being one-half inch thick. A laparotomy cured the case. Another case being one in which the patient's general condition was such as to prevent an anesthetic being given. An incision was made under cocaine. The patient was cured as proved by an examination three years later while operating for a hernia.

In some cases the peritoneum is studded with fungating tuberculous masses, the parietal peritoneum being as thick as a shoe sole. The microscope in many cases will show the presence of the specific bacilli. Rendu uses a mixture formed by fusing one part of camphor with two of naphthol, this being rubbed into the various sulci of abdomen cavity.

The age of the patients vary from two years (very rare) to seventy according to Osler in 346 cases, both sexes included.

Under 10 years, 27 cases; 10 to 20 years, 75 cases; 20 to 30 years, 87 cases; 30 to 40 years, 71 cases; 40 to 50 years, 61 cases; 50 to 60 years, 19 cases; 60 to 70 years, 4 cases. Above 70 years, 2 cases;

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Kelley 29 cases; 18 whites, 11 blacks; average age of white patients, all females, 29, 55 years. Average age of black females, 25, 63.

Abbe believes that the washing out of the peritoneum is followed by an acute engorgement of the tuberculous nodules, which is followed by rapid envelopments of the nodules with a fibrous tissue, thus destroying the vitality of the bacilli and causing a retrograde metamorphosis of the neoplastic tissue.

Weir believes the same process is brought about by the damage done to the peritoneal surfaces at time of operating.

An exposed mesentery or any surface of peritoneum opened to light and air soon becomes hyperemic. The rapidity of the blood flow is rapidly increasing and the blood vessels visibly become more numerous. This increased flow of blood is transient, and in its stead a sluggish circulation is observed. The vessels are literally filled with white corpuscles, even at this time these scavengers are finding their way through the walls to the veins. The entire wall of the veins appear lined with white corpuscles. Fluid is exuded into surrounding tissue. If the process stops here we have the parts resuming their normal state. If any infection is added to this hyperemia the process changes to a more severe condition—infectious peritonitis. It has been noticed that curare produces a great hyperemia of the abdominal viscera.

The disturbances of circulation in an inflammatory process is slower in its appearance and is of longer duration than that accompanying a simple hyperemia, the exudation being much more pronounced in the former. Cabots, experiments disproved the presence of leucocytosis in tubercular processes, while in septic peritonitis it was usually present in a marked degree. A diagnostic symptom of no small import in suspected tubercular peritonitis.

An aseptic hyperemia (inflammation) which is short of any death of the tissues may conserve in a reparative or curative process of the peritoneum in peritonitis of a tubercular character.

As an accompaniment of this hyperemia there is an increased flow of lymph, which acts as a diluent to the morbid tubercular product exercising a more of less antiseptic power. The phagocytes are greatly increased and the attack on disease is more vigorous.

One of the evidences of putrefactive and other bacterial chem-

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ical action is the formation of coloring matter (chromogenic bacteria). In a number of the cases of tubercular peritonitis falling under my care there has been present on the face and other exposed parts of the body the brown spots (chloasma) usually attributed by the layman to a diseased liver.

Recent pregnancy has been mentioned as a causative factor of tubercular peritonitis. In two of my cases the women were pregnant at time of operating.

I am disposed to believe that an explanation of how these cases are cured from a surgical procedure may be found in the probable production of an antotoxine within the peritoneum owing to some unknown function of this great lymphatic. In no other way can we explain how a tubercular pleurisy is cured, as is often the case by an incision into the peritoneum. I am sure I have seen cases of well-marked tubercular disease of the lung with pleural effusion symptomatically cured from the incision made at time of operating on a similar process within the peritoneum.

There exists within all healthy individuals a power of resistance to the invasion of most microbes. This immunity is brought about by some force or action within the body at this time not altogether understood. The theory of Metschinkoff of phygitisis does not explain all the phases of this subject. I am firmly of the opinion that a chemical agent, call it antitoxine if you may, is being manufactured within the body constantly. This agent induces an immunity to the invasion of microbes. If this was not the case we would be in constant danger of destruction from the bacteria that we eat and drink and breathe every day. Specific bacteria (tubercular bacilli) require the manufacture of a special antitoxine.

I do not believe that a modification of the nutrition is all that is necessary to permit the invasion of microbes.

The bacilli that are present it is presumed are killed, cease to multiply, or are held in abeyance, in these cases that get well after a laparotomy, the operation stimulating the peritoneum to an increased activity in the production of this antitoxine.

Even a trivial operation on the urethra or bladder is liable to be followed by severe symptoms, symptoms out of all proportion to the gravity of the operation. These symptoms are not confined to operations on genital organs. A severe chill may occur and be followed by a high fever the result of a reflex irritation of the sympathetic renal nerves through the passage of a sound. The vaso-motor nerves are paralyzed, renal congestion takes place,

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and transient urinary fever is produced. The color bacilli can produce toxines that are very poisonous in minute doses.

Bacteria that are not pathogenic within themselves (saprophites) by their action on dead tissues or structures diseased may produce by decomposition poisons of a virulent character, the nature of which is not thoroughly understood. It is generally accepted that the product of these germs produce a destructive action on many forms of bacteria. This chemical change, says Pasteur, "may continne until the bacteria are all destroyed and the organic material is completely separated into the constituents of the atmospheric and mineral kingdoms."

An evidence that there is an antitoxine manufactured within the peritoneum in primary tubercular peritonitis is the fact that pulmonary complications are rare, a specie of immunity to the disease in distant organs.

Any surgical procedure that is attended by a 2 per cent. mortality and a 30 to 80 per cent of cures in a disease that otherwise has a very high death-rate, is certainly a warrantable one; especially is this true in a disease when the medicinal management is almost futile.

All surgical treatment should be supplemented by a thorough anti-tubercular medicinal course.

Too little importance is attached to the necessity of keeping the bowels regular in not only tubercular peritonitis but in pulmonary tuberculosis. In the cases when there are no intestinal involvement by the disease, the retention of fermentative material will weaken the muscles of the bowels, thus permitting the intestine to become distended thereby weakening the resistance to invasion of the peritoneum from within the bowel. Absorption is one of the main functions of the digestive tract. Self-protection from auto-infection is one of Nature's greatest and best laws.

Guaiacol, cresote, etc., are remedies having apparently almost a specific action in tuberculosis, part of which results being due to the local intestinal sterlization and anti-fermatative properties of the drugs. The administration of cathartics and the use of colon flushings should be resorted to as often as required to keep bowels regular, prevent protracted intestinal distension, and to hasten peritoneal absorption.

In some cases the operative indications are for the relief of complications as a result of the original pathology, as abscess formation (from mixed infection), or intestinal obstruction from

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extensive adhesions. Operators should lend encouragement not to abandon any case as being hopeless.

All diseased structure when possible should be removed at time of operation, as the Fallopian tubes, omentum, etc. Intestinal adhesions should be separated with great care, less numerous openings be made into the bowel.

All fluid should be sponged out at time of operating. In operating the usual median incision is made, the fluid is removed by sponging, if no fluid exists adhesions are carefully separated; if pus is present the pocket is packed with gauze and drained; very rarely is it necessary to irrigate with saline or other fluids.

I have in some of my cases used iodoform gauze to brush over the surface of the bowel and peritoneum. In a few of my cases I have used a glass drain, but the cases not drained have done equally as well. Constitutional remedies have been used in all cases. My cases, while limited in number, are sufficient to warrant a brief report. Eighteen in number in which the diagnosis was certain. Of this number 15 were operated on with no deaths from operation. Three were not operated; of this number one died of acute milliary tuberculosis, one is still under observation and has the disease well marked, the other case has symptomatically recovered. Three years since the last evidence of disease.

One of my operated cases died eight months after operation from abscess of spleen. Another case died from pulmonary tuberculosis several months after operation. In this case three years prior to time of operating for the tubercular peritonitis I removed a large ovarian cyst from the patient. At that time there was no evidence of the disease under consideration. At time of operating the second time I found very extensive en volvement of the intestines with the fibrino-plastic form of the disease. The agglutination was so extensive that I found it necessary to resect 27 inches of the small bowel. She recovered from this operation nicely, but died from the pulmonary complications eight months later. Of the 18 cases there were 14 females and 4 males. The average of females, 27 11.14 years. The average of males, 28 years. There were married, females 7; there were married, males 1. The youngest patient's age 14 years. The oldest patient's age 45 years.

Two of the cases were very fleshy patients, both females. Two were pregnant at the time of operating, (about fourth month). One of these cases had a large ovarian cyst. The other had ex-

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tensive omental and intestinal adhesions, binding uterus in pelvis. Both of these women went to full term and were delivered of living children.

One case was treated for eight months for a condition simulating typhoid (tubercular peritonitis active) fever. This case I operated on several months later, doing an abdominal hysterectomy for a fibroid. Her symptoms (fever, pain, etc.,) have all disappeared. The peritoneum was studded with milliary nodules. One case had a large ovarian cyst as a complication. The case that died was a male patient age 45. The disease being very acute at time I saw him. A post-mortem verified this diagnosis.

In one case I operated for a tubercular peritonitis and three years later re-opened the abdomen for the removal of an ovarian cyst. No trace of the original disease could be found. Two of the cases were very fat women, yet a very extensive invasion of the peritoneum was fornd. In one case the operation was performed for an appendicitis. In this case I found the peritoneum filled with a fluid that coagulated as soon as the air came in contact with it. The fluid had the appearance of pus, but was a tubercular fluid. This case is entirely well. Pulmonary and pleural complications were noted in a few cases the exact number my records fail to show.

In only one case was there evidence of Fallopian tubal disease of a tubercular character. One case had as a complication a tubercular mesenteric cyst size of a cocoanut.

DISCUSSION.

Dr. Hughes: I enjoyed the paper very much, and I want to endorse some of the doctor's views. He said that tuberculous tubes very seldom caused a tuberculous peritoneum. That accords with my own experience. I have never seen a death from tubercular peritonitis that had been operated upon. Every case recovered, and remained well for many months and some for several years. As the doctor says, it is seldom painful, but it is astonishing to me that it is not so. Some of the cases put on flesh, but in the majority of the cases, they become very thin.

Dr. Jackson: I want to report a case which I think unique, and in some respects amusing. A child ten years old was sent to me from the western part of the State. The parents were a mixture of Germans and Italians and I could not get anything from them about the history of the case. Upon examination I found the abdomen very much enlarged and diagnosed dermoid

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cyst. There was some difficulty about getting the consent of the parents to an operation, but finally it was obtained, and I telephoned over to the house surgeon to make ready for the operation the following morning. Within about half an hour he telephoned me that when he took off the dressing, there had been a profuse discharge of fluid from the abdomen. I went over and found that there had been an escape of probably a gallon or more of fluid which I take now to be simply tubercular pus. I still advised that we open up the abdomen and clean it out, and make an exploration to see whether it was a cyst or what not, but the people said, "That 'bile' is busted; what is the use of doing anything more with it?" Nature had performed a spontaneous laparotomy and effected a spontaneous cure.

Dr. R. S. Magee, Topeka, Kas., read the following paper on "Iritis Versus Conjunctivitis."

Conjunctiva comes from two words *con* together and *junctiva* to join or yoke meaning to join or yoke together. It is the inside lining membrane of the lids of the eye and covering of the anterior surface of the eyeball. It being a continuous coat it forms a sac when the eyes are closed or are brought together; it is open when the lids are apart the palpebral fissure forming the opening into the sac. For the sake of convenience we call that portion of the membrane which lines the lids the palpebral conjunctiva, that which covers the eyeball the ocular conjunctiva. One and the same membranes differing but very little in structure. The palpebral is slightly thinner and immovable. The ocular is thicker and freely movable, very loosely attached to the eyeball, and can be moved back and forth by pulling on the eyelids.

The point at which the ocular conjunctiva becomes the palpebral is called the fornix or culdesac, the upper and lower respectively. The lower or inferior fornix can be easily seen and exposed by drawing the lower lids away from the eyeball. In looking for foreign bodies the upper or superior fornix is more difficult of inspection, requiring the lids to be everted, and even then it is not all brought to view. The palpebral conjunctival membrane contains acinious mucous glands and abundant lymphoid tissue. This gathers into masses forming follicles. This mucous membrane is of adenoid character contains an abundance of round cells, which increase in number rapidly with every inflammation of the conjunctiva. The ocular conjunctiva has no

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papillæ and contains no glands. It has many round cells and leucocytes among its fibres, but has no lymphoid or adenoid substance.

The blood supply of the conjunctiva comes through the posterior conjunctival and anterior ciliary vessels, these enter the folds of transition or fornix. The lax character of the fornix and its abundant bloody supply render it particularly liable to great swelling in inflammation of the conjunctiva.

From the fornix the blood vessels pass out over the lids and eyeball supplying the entire mucous membrane. The anterior ciliary arteries run up to the edge of the cornea form loops and then dissappear through the sclera to the interior of the eye. These lie deep and have a bluish luster (violet color). The color of the injection of the conjunctiva vessels is a vivid scarlet or brick red. The conjunctiva with its vessels can be displaced, by catching hold of it and moving it backward and forward, thus separating a conjunctival injection from a deep scarlet injection or sclero-ciliary injection. The nerve supply of the conjunctiva is from the fifth. The function of the conjunctiva is a protecting membrane. It is also a lubricating surface. It resembles a serous membrane in that it has a parietal and visceral layer which lie in apposition. It furnishes a fluid which comes from its ówn vessels and glands reducing friction to a minimum. It is on account of the numerous anastomoses existing between the posterior coujunctival and the anterior ciliary vessels that the lids and ocular conjunctiva becomes injected from disease or from injury to the anterior portion of the eyeball, viz., the iris and ciliary body. This explains how the lids redden in eye-strain. About 30 per cent of all diseases of the eye are furnished by the conjunctiva. Numerous subdivision of these diseases can be made. But the general feature of all cases of conjunctivitis are redness, edema and increase of the secretion of tears, mucus and serum. It is also to be emphasized that most generally the secretions of the conjunctiva are contagious. The disease is communicated directly by the secretions or towels, handkerchiefs, or fingers, and may be indirectly through the atmosphere. Inmates of asylums and of poorly ventilated school-rooms are susceptible to infection by this means. Iritis is in no sense contagious. The more common forms of conjunctivitis are hyperemia of the conjunctiva, simple catarrhal conjunctivitis, purulent conjunctivitis (blenorrhoea), diphtheritic conjunctivitis, granular conjunctivitis and phlyctenular conjunctivitis.

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The iris is the colored membrane of the eye situated just behind the cornea within the aqueous humor, and has in its central portion an opening called the pupil. The iris is directly connected with the ciliary body and choroid and all taken together are called the uveal tract or the vascular tissue of the eyeball.

This in some measure explains the reason why diseases affecting the general circulatory system often make their appearance in part of the eye, viz., rheumatism, diabetes and syphilis.

The nutrition of the aqueous humor, of the crystalline lens and vitreous depends upon the uveal tract; hence a disturbance in the iris affects these media to a greater or less extent depending on the severity of the disease. This disturbance is manifested by a cloudiness or an opacity due to an inflammation, and in some cases an exudate, which is often permanent, coming from the vessels as a result of the inflammatory process. In conjunctivitis a blurring or cloudiness comes over the vision caused by the secretion collecting on the cornea. This is readily removed by winking or washing the eye, when the vision will become clear as usual again. But no amount of winking or washing will clear the blurred vision in iritis.

In iritis the ciliary body often becomes affected, increasing thereby very greatly the pain and tenderness of the eyeball on pressure. No pain is experienced in simple conjunctivitis unless the lid be swollen, and the pain in such a case is not so much due to the irritable conjunctiva as to the increased tension in the lid. Pressure on the lid will determine the location of the pain—if superficial it is in the lid; if deep in the ciliary body; while this pressure is being made the patient should be directed to look down and in this way the ciliary body is brought well forward.

In iritis the color of the iris undergoes a change. A blue or gray iris takes on a greenish tint and a brown or hazel iris a muddy indistinct hue. This change is brought about by the the swelling of the iris, the turpidity of the aqueous humor from an exudate dissolved in it and also from the pouring out upon the surface of the iris an exudate, plastic or serous, in which the hemoglobin has been washed out and adheres to the surface of the iris with the exudate and becomes a part of it. These together with a desquamation of the superficial epithelium of the iris, brings about a change in its color. Not so in conjunctivitis the color of the iris is unaffected.

Occasionally you will find persons having different colored irides, but it is somewhat rare. In iritis after a short time a

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sticky exudate is poured out which will glue the posterior surface of the iris to the lens, rendering the pupil immovable, as will be readily discovered on the use of atropine. These attachmente are called synechiæ. No such attachments form in a conjunctivitis and no necessity for the use of atropine. In iritis atropine must always be used unless prevented by an idiosyncracy. Never in a conjunctivitis pure and simple. These attachments if permanent destroy the future usefulness of the eye and predispose to recurrent attacks of the iritis.

In conjunctivitis, after recovery, the function of the eye is not impaired or at least should not be. These synechiæ, sequelæ of iritis, predispose to sympathetic trouble in the other eye. No such danger in conjunctivitis. Infection may be carried, and is frequently carried to the other eye in conjunctivitis, resulting in inoculation, but this is in no sense sympathetic. In iritis there is usually great dread of light and lachrymation; not so in conjunctivitis, unless the cornea is involved; in which the superficial epithelium is denuded exposing the terminal nerve points or in ulceration of the cornea. No hypopyon in conjunctivitis unless there is ulceration of the cornea accompanying. In severe iritis there is often hypopyon, and it is a very dangerous symptom. In iritis the pain is usually felt in the brow and temple along the path of the nerve, while in conjunctivitis the uncomfortable feeling is that of sandy, scratchy sensation in the eye.

Causes of Conjunctivitis are—1. Eyestrain, use of the eye for long hours or late at night; conjunctivitis due to these causes does not yield to treatment, but may be alleviated. A cure is not affected until error of refraction is corrected. I should always apply treatment to these cases, and give the patient the benefit of the doubt. Prescribing glasses, later, as a last resort, unless wholly satisfied at first that the conjunctivitis was clearly the result of some error of refraction, then they would be fitted with proper glasses.

2. Dust and smoke of various kinds, millers, blacksmiths, and sweepers; the irritation resulting brings about a hyperemia ending in a more or less permanent redness.

3. *A foreign body* either in the cornea or lodged under the lid will set up in time an inflammatory reaction of the entire conjunctiva. In all cases of conjunctivitis do not let the opportunity go by of carefully scrutinizing every nook and corner of the conjunctival sac, as well as the cornea, for foreign bodies. If due to this, your case is cured when the foreign body is removed. If

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overlooked treatment will be of no avail, and the eye will gradually and sometimes very rapidly grow worse. 4. Hay fever and catarrhal trouble of the nasal passage bring about an inflamed ocular mucous membrane from continuity of structure.

5. It always co-exists with catarrh of the lachrymal sac and stricture of the nasal duct, and does not yield to treatment until the obstruction is removed, in the tear sac and its outlet. Lastly, in most of the purulent and plastic types the contagious element is a micrococcus of a distinct character. In all these cases it is important to ascertain and remove the cause. In all forms of conjunctivitis an antiseptic is called for, and its application must be made directly to the conjunctival membrane. Probably nothing better can be suggested than the saturated solution of boric acid and used warm. Its effect is soothing and mildly stimulating, and is in no way liable to do any injury to the eye by its free use.

As to iritis there are but two causes.

1. *Traumatic*—Those cases due to an injury; and

2. *Constitutional*—Syphilis, 75 per cent.; rheumatism, malaria, and diabetes.

In the management of iritis the treatment is both local and constitutional; atropine freely and warm hot applications at frequent intervals when pain is severe. Internal administration of such agents as are necessary to combat the constitutional disturbance responsible for the local affection. This outline of treatment is exceedingly brief, as it was the chief purpose of this paper to lay particular stress upon the symptomatology and diagnosis of these two diseases, and hence but little attention has been given to the treatment.

DISCUSSION.

A member: This is the kind of a paper I like from the specialist. Some of the papers which we have had from the specialist seemed to bother the specialists themselves to understand them; but here is one which everybody can understand, and I want to thank the author therefor.

Dr. Longenecker: I am very well pleased with the paper, because I think it is an able treatment of an important subject. It is certainly of capital importance to be able to make discriminative diagnoses in these cases. The paper showed very clearly the two diseases, and how to detect the difference between the two. In the matter of diagnosis: In conjunctival affections, we

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always expect to start off with, in addition to the water which comes from the eye, a mucus, a purulent secretion which, in a measure, glues the lids together, but in affections of the iris we have nothing but the watery secretions. This is an important thing to remember. This symptom is sometimes overlooked, because we frequently find adhesions, we find persons who, from a prior iritis have adhesions over the retina, and if these have grown hard and firm, it is impossible to relieve them with medicines, and an irritation of the eye is liable to bring back a return or the iritis at some future time. So that if the two affections can be clearly distinguished from the start, and properly treated, it will be of great service to the eye. Conjunctivitis is not a serious inflammation, iritis is serious on account of the sequela which may follow. In the matter of pain, as the doctor said, we have a pain coming from the iritis, affecting the temple and forehead with a sort of neuralgic pain that will go on into paroxysms. It is generally worse at night when we lie down. The pain that comes from conjunctivitis is more like that which comes from the presence of a foreign body under the eyelid. In the matter of treatment, the doctor has given it very briefly in his paper, but he has probably said all that is necessary—the application of boracic acid in cases which do not become serious and sulphate of zinc as an astringent. In the latter stages of iritis, the mainstay of the treatment is, of course, atropia, unless there are other indications of internal medication. In such cases, the specific condition should, of course, be detected, and the necessary internal treatment be applied.

Dr. Taylor: I want to thank the doctor for the very plain paper which he has read. I am reminded by it now how nearly I once came to overlooking a case of iritis. A man had gone to Kansas City and come home with a red eye. Said he had a cinder in his eye. Fortunately for him I was suffering myself with a little eye trouble and I could not see anything more than the redeye. I supposed that a cinder had caused it, and paid but little attention to it; but he became dissatisfied and came to Dr. Minney, who found that there had been a cinder that had plowed its way along and fallen out. If my eyes had been in a proper condition to have seen the track of the cinder, I should undoubtedly have said, "Your eye will get well, you have had cinder in it, but it will get well now," but Dr. Minney discovered in addition to what appeared, upon a casual view to be conjunctivitis, irritis, and it has always been a warning to me to look closely and deeply into these things.

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Dr. Reynolds: In relation to diagnosis I wish to mention the fact that some diagnosticians advise in any case of redness of the eye to use atropine. I do not see any objection to this practice, because you do not need to be much of a diagnostician to use atropine on a red eye. Of course, there might be a patient so far advanced in years that atropine should not be used; but any thoughtful person, one who is skillful enough in diagnosis to know when to use atropine, will avoid danger. Of course you may have conjunctivitis or iritis, and one unfamiliar with eye work may not be able to differentiate them; but if you use atropine, and your case proves to be one of conjunctivitis, you have done no harm.

Dr. May: Differential diagnosis, between conjunctivitis and iritis is certainly of the utmost importance, for this reason: If you make your diagnosis early, and apply the proper remedies thereto in iritis, you will have accomplished your purpose right at the beginning of the case, while, if you do not come to as early conclusion as to the differential diagnosis, there is great danger of complications taking place which may never be relieved. Sometimes they can be broken up after they have taken place, but we frequently get them where it is impossible, even with eight or ten grains of atropine to the ounce, to effect a cure. Dr. Reynolds has spoken on the use of atropia even in a case of conjunctivitis. Now, if you cannot be sure you have iritis, I cannot see any harm, especially if the patient is a young person, in using the atropine. In conjunctivitis, I think the treatment at least, in a simple case, may be carried on by hot water to a great extent. Applications of hot water, and frequent use, of course, of boracic acid, the saturated solution, is evidently correct treatment. Now, in conjunctivitis, again, the inflammation may extend from the conjunctiva to the iris, and sometimes you may even have a hyperemic condition of the iris. In such a case you forestall the iritis by the use of atropine.

Dr. Alkire: I enjoyed the Doctor's paper very much and consider it a very important one because of the frequency of the disease known as conjunctivitis. It is one with which I presume every practitioner has to deal; he cannot send all his patients to the specialist. The skill with which the first treatment is applied is going to have a very great deal to do with the results which are obtained in the particular case. I believe you cannot be too careful in all cases of conjunctivitis, or too painstaking in

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your examination and treatment of the patient. I know that some are in the habit of making a hasty diagnosis. They look at the conjunctiva; it is inflamed, they have no trouble, they know they are dealing with conjunctivitis, but they should inform themselves of the cause, if possible. Now, very frequently it is due to the presence of foreign bodies; sometimes it is due to something which has been rubbed on the eyeballs; it may be due to a great many things, to infection, to constitutional disease, but whatever the cause is, the success of the treatment will depend upon the ability of the physician to determine what the cause is, and without endeavoring to go over all the ground covered by the paper, I wish to lay some special stress upon the treatment, because that is what interests the physician most. After having diagnosed the case, and found out if, possible, what the cause is, of course your duty is plain, but in the treatment there are some things upon which you must lay great stress. In the first place, you cannot be too careful concerning the aseptic or antiseptic method of treatment. You should pursue the most rigid aseptic or antiseptic methods in all cases, and in doing so, instruct the patient to be very careful in cleansing the eyelashes. In many of these cases, especially if there be iritis, it is important that the patient should wear smoked glasses, or place himself in such a position that the light will not act as an irritant to the eye. Concerning the use of atropine, I would always suggest its use whenever there are any indications of iritis or involvement of the ciliary body, but I would enjoin upon every practitioner the need of carefully noting the condition of the ocular pressure, because if there is such a tendency and you use atropine, you would handicap your patient a great deal. There is a form of conjunctivitis, and of iritis, which we often find associated with or caused by malaria, and I think we specially need to appreciate the necessity of constitutional treatment in all such cases. I think it an extremely good plan to give medicine to act upon the bowels; it certainly can do no harm, and you will in many cases, get a great deal of benefit from opening the intestinal canal, and inducing free drainage and lessening the engorged vessels.

Dr. Minney: In the treatment of iritis, owing to photophobia there is a tendency with us to put the patient in a dark room. I think it is a mistake; if possible, we want to avoid that; the disease is enough, let alone to have the patient depressed by being shut up in continual darkness. Of course, the room should

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be ventilated, but as a rule, I say avoid a dark room in the treatment of eye troubles, especially iritis. I think the food, should be carefully guarded, and the patient not allowed to fill up on everything he may like. If he lives in Leavenworth, he should be particularly cautioned about drinks. The physician should do the drinking and let the patient be free from that habit. If the patient must smoke, let him do so out of doors where the wind will blow the smoke away from him. We see more eyes diseased from iritis than any other disease, and I will say this: There is no disease which can be more satisfactorily treated if recognized early, than iritis.

Dr. Magee: I am very grateful to the members for their discussion of this paper. Just a word in closing about the use of atropine. If you desire to make a differential diagnosis, and are in any doubt about the matter, it is perfectly proper to use atropine. But it has no curative action on the conjunctivitis. In iritis, the sensation is very frequently that of a cinder or cilium in the eye. Here is where the mistake is often made: In looking for either of these two things, we fail to find it; there is no foreign substance in the eye, and we are likely to say that in a day or two it will be all right. But it will not be all right; it is a symptom of iritis that we find, and we should be very careful in looking after the eye. I thank you.

P. D. Hughes, A.M., M.D., Kansas City, Kas., read the following paper on "Fibroma of Uterus—Excision."

Patient from Dr. Alexander, of Argentine, Kas., Mrs. M., 41 years of age, entered Bethany Hospital, November 21st, 1899, with a history of tumor of the abdomen during past 12 years. She also gave a history of profuse and persistent menstruation. Palpation disclosed a large indurated and very irregular tumor, reaching from pelvis to liver, and nearly to umbilicus on the left. Patient very anemic, and unable to walk more than a few steps at a time without evident exhaustion.

After a few weeks' effort to improve the condition of her blood; with careful preparation a more thorough examination was attempted by means of palpation and the use of a sound. The probe was gently introduced to the supposed full depth of the uterus, about four inches and withdrawn.

No blood appeared as a consequence of its use. Several physicians present palpated the mass freely. The patient had a hard

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chill by midnight. The temperature went to 106 before morning and for about three days it seemed she must die. The temperature gradually returned to normal, delirium disappeared, and in a week or two the condition became like that before examination. I presume that the free manipulation of the tumor resulted in absorption of disturbed necrotic tissue, the result of degeneration in the older portions of the tumor.

After careful feeding and medication, the mucous membranes became a slightly better color, and the operation for removal was done January 11th. Recovery was slow, but patient left hospital in good health February 8th.

The specimen I call your attention to on account more especially of its odd shape, and because we here see the three forms, sub-peritoneal, interstitial and sub-mucous.

Dr. C. F. Leslie, of Clyde, read the following paper on "Diagnosis and Treatment of Intestinal Obstruction."

Ladies and Gentlemen of the Kansas Medical Society: At the request of your secretary of the section of General Medicine, I come before you with a paper on the "Diagnosis and Treatment of Intestinal Obstruction."

This subject is important and one worthy of our consideration; so like the minister with an excellent text, but poor sermon, if my paper is a failure it will not be the fault of the subject. It is more from a desire for information myself than hope of instruction for others, that I come before you today. While you may not agree with me, I shall hope to get an expression from a goodly number of their ideas on this subject. It is only by a free exchange of opinions on cases that are of importance in every-day practice that we, as physicians, can derive the greatest benefit from these annual meetings of our Society.

This topic being suggested to me from cases in my own practice you will kindly pardon my mentioning briefly two or three.

Doubtless all of you have been called with more or less frequency to see cases of this character, with very urgent symptoms, demanding prompt measures on the part of the physician. In many of these cases an early and correct diagnosis is of the utmost importance. To hesitate is to endanger your patient; to treat the case without an accurate diagnosis is to run the risk of a fatal error; and to assume the responsibility of a grave case when you are in doubt, is a mistake almost unpardonable. It is

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a serious matter to make a fatal mistake, for it means one more life gone out before its time, and one more family circle left to mourn the loss of a loved one—and all because the doctor, the trusted adviser, did not know.

Hence, happy is the doctor who is capable of making an accurate diagnosis at the proper time, and fortunate is he, who, if he does not know himself, has the good sense to call someone who can tell him in season.

This class of cases often demands the services of the abdominal surgeon, but as the family physician is the one who is first called, the responsibility of shaping the course to be pursued rests with him and it is with the part of the physician and not the surgeon that I shall deal; but I wish to emphasize the fact, that if the family physician fails to recognize the gravity of the case, the patient may be deprived of the benefits of surgery, which often must be resorted to early in order to succeed.

Leaving out malignant diseases of the bowels, intestinal obstruction may be divided into five general heads. These I shall mention as, (1) impaction of the bowel with fecal matter; (2) appendicitis; (3) intussusception; (4) volvulus; (5) strangulated hernia. Of course there may be many other causes of obstruction of the bowels, such as the numerous articles swallowed by children and by older persons as well to show what feats can be performed. In one case in my practice a bunch of cotton swallowed by a child one year old caused death. Gallstones sometimes obstruct the bowels and may attain great size. Bristow says: "They are sometimes found four inches long and from three to four inches in circumference." I have myself seen one nearly as large, which lodged in the rectum and had to be removed with instruments.

Constipation of the bowels should be considered with impaction of the bowels. There is a wide range in degrees of constipation in different individuals; the degree of constipation which is habitual with one man and compatible with perfect health, may be a source of great discomfort or positive illness with another. To show to what extent constipation may reach and the person live, I refer to a case reported by Dr. Robert Williams, and mentioned in Holmes' Surgery. This case was a woman who frequently went six weeks without an evacuation of the bowels, and one year this occurred only four times at intervals of three months. At one of these evacuations several lumps as large as a child's head were passed. Of course this is a very exceptional

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case and the woman had the opium habit. But most persons who are accustomed to daily movements of the bowels, are made ill by a retention of feces for a few days, and if not relieved in a reasonable time, pain, vomiting and symptoms of inflammation are apt to occur. Among the articles of food that cause impaction of the bowels may be mentioned: nuts, popcorn, oatflakes, and milk. I have several times seen cases resulting from eating popcorn in large quantities. Last summer I attended a patient with very severe symptoms, pain, vomiting and great distension of the bowels. I diagnosed impaction of the bowels, caused by a diet largely of oatflakes and milk. In this case, after I had gotten extra large evacuations by cathartics and enemas, I noticed that the contents of the passages was in flakes and layers, which suggested that the evacuations were not complete, and a continuation of the treatment brought away an enormous quantity of the same flaky substance. The first movements had only made an opening through the impacted mass, and, had I not continued the treatment, only temporary relief would have been obtained. The rule should be to continue the treatment till the evacuations have a natural appearance. The location of an impacted mass can generally be determined by manipulation. When, however, the wall of the abdomen are too thick, or peritonitis has ensued, we have to be guided by the symptoms. The location of pain will be some guide when peritonitis is not present, and vomiting is an indication. If vomiting occurs early it means an obstruction high up in the intestinal tract; but, if it comes on late in the attack it indicates trouble low down, and this same fact holds true with any complete obstruction of the bowels.

Appendicitis.—The diagnosis of appendicitis should be made without much difficulty by an ordinarily careful physician of experience; but the treatment will depend upon whether you consider it a case for the physician or surgeon. As you all know some authorities claim that *every* case of appendicitis is a surgical one, while others do not make so broad a claim; but the decision of the physician is very important, for on his judgment very often will the life or death of his patient depend. My own opinion is, and I believe it is supported by the weight of authority, that the safe course is to operate early during the first thirty-six hours. By such a course many lives would probably be saved; but if not operated upon early it is better to treat the case through the acute stage and then operate to prevent a recurrence. As doubtless there is considerable danger of converting a local appendi-

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citis into a general peritonitis, after pus has formed, by infecting the peritoneal cavity during the operation. But, if the appendix should rupture during the course of the disease, then operate at once, with the least possible delay, and give the patient all the chance there is for life, though it will probably be very small. So far I have spoken only of the physician and patient; but there is another class which has to be reckoned with in these cases, the circle of immediate friends and kind neighbors, whose intentions are always good, but whose judgment is often faulty, and the country physician will often find it difficult to convince these people of the urgent necessity of an operation, hence many cases will continue to be treated by the physician.

In the treatment of appendicitis I believe care should be taken not to give large doses of cathartics; frequently there is complete closing of the bowel either from an adhesive band or a kink in the intestine, and the action of the cathartic tends to increase the spasmodic contraction of the intestine, which not only adds to the pain, but, if it does not force a passage, and it often fails, will result in vomiting and very likely extend the inflammation. If a large mass is forced through the cæcum at this time there is danger of rupture of the inflamed bowel or the appendix, producing general peritonitis. Of course the appendix may rupture with any treatment, and this generally means death, though not always. I treated a boy with appendicitis, last fall, where the appendix ruptured and was followed by general peritonitis and recovery; and an operation after the second attack revealed an opening ⅛ of an inch in diameter. The boy made a perfect recovery. My favorite treatment in this class of cases is frequent doses of calomel, 1-10 gr. each. A turpentine and opium emulsion containing 10 drops of turpentine and 15 to 20 drops McMunn's elixir opium to the drachm, and teaspoonful doses every two to four hours as needed. If more opiate is required I use hypodermic injections of morphia; this is supplemented by enemas as needed, care being exercised not to use too much force, or too large a quantity. This treatment quiets the pain, relaxes the muscular spasm, relieves the tympanitis and generally produces a natural evacuation of the bowels. A similar treatment with more opium applies equally to peritonitis. Pardon me for dwelling a moment on the treatment of peritonitis, as it is one of the complications likely to arise in the conditions under consideration. We should remember that the peritoneum itself possesses the key to recovery in its wonderful

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power to absorb hemorrhagic, serous and septic exudations If the patient can be kept free from pain and his strength sustained, many times recovery will take place in very serious cases. Now, I believe the agent most likely to accomplish this result is opium, but it must be given in large and frequently repeated doses to succeed.

Roswell Park says that, "Opium is the sheet anchor of the physician in peritonitis." But we should remember that the question is not one of dosage, but one of effect; the amount given should be a secondary thought but it should be pushed till the patient is completely freed from pain and put comfortably at rest. Under its influence nausea and vomiting, in most cases, will subside, abdominal distension decrease, tenderness be allayed, and evacuations take place quite naturally.

I have generally followed this line of treatment in peritonitis, and the mortality in my cases of this disease have not exceeded six per cent. Last year I treated a case of peritonitis occurring, probably, from perforation of the intestine during the fourth week of typhoid fever. The patient was a woman seven months pregnant. Peritonitis came on suddenly, extending over the entire abdomen in less than eighteen hours. Premature birth of a living child occurred at this time, but the peritoneum was so hard and rigid that there was no change in the contour of the abdomen for ten days, from what it was before the birth of the child. In this case I believe opium saved my patient.

Intussusception.—The diagnosis of intussusception can usually be made by excluding appendicitis and strangulated hernia, which it does not simulate, and by the presence of bloody stools, which does not occur in either impaction or volvulus. The only treatment that should be considered is surgery, though occasionally an expectant plan may succeed through sloughing of the invaginated portion of the bowels, but this is only Nature's method of surgery.

Volvulus differs from intussusception in the absence of bloody stools, and from impaction in the fact that it comes on suddenly, with great pain and without any history of constipation. The only hope is in surgery, which should be resorted to immediately upon a diagnosis being made.

Strangulated hernia.—The diagnosis of strangulated hernia ought not to be difficult and if the usual methods of reducing it does not succeed without using any great degree of force, or, if it does not relax under an anesthetic, the hernia should be cut

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down upon at once without delay. This the physician should be able and prepared to do himself, and not lose precious time and perhaps his patient by waiting to send to a distant city for a surgeon. The surgeon can be summoned later if his services are needed to perform a complete operation.

DISCUSSION.

Dr. Hughes: I wish the Doctor had dwelt a little more on intussusception. It is an important disease, for it is one of the most fatal complications that I know of. I notice that in the treatment of intussusception sweet oil is largely used, as much as from one to four pints being injected at one time for the purpose of straightening out the gut. From what the author tells us, I presume that any other bland or non-irritating oil would do as well, and that the tumor will generally be found, upon palpation to disappear. If it still, persists then an operation should be done. In regard to appendicitis, and the time to operate: I make it a rule to wait 24 hours to 48 hours; not to exceed 48 hours from the first symptoms, and if the patient is not progressing properly, I advocate operation; if he will not submit to an operation, I refuse to have anything further to do with the case at the expiration of 48 hours. The treatment I endorse is the administration of calomel and salines. I never give any purgatives after 36 or 48 hours; I never attempt to purge a case of that kind. I do not give morphine of any kind; I apply applications of hot water sometimes mixed with turpentine, and where there is great gaseous distension I give common salt, about a tablespoonful, borax and turpentine, and repeat every half-hour for three or four applications.

Dr. Boyle: I must say that I endorse the paper very thoroughly that Dr. Leslie has read. As it is not considered a discussion of a paper to report cases, I will content myself with saying that I have had a good deal of experience with both kinds of solicitous neighbors that Dr. Leslie describes. My experience in operating has been limited; I have operated on three cases, one recovered, and the others died, but in one case in which death occurred, there had been a spontaneous rupture into the abdomen; I found it literally full of pus.

Dr. Green: The diagnosis is a matter of the first importance. It is very difficult to differentiate between peritonitis and occlusion of the bowel. We were told by Dr. Murphy a few years ago that there was one act by which the physician could destroy

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all the valuable evidence he had, and that was by the use of morphine; that it paralyzed the peristaltic action for 12 hours, and that the important point in diagnosis was auscultation; that it was of as much importance in the abdomen as in the thorax; that in peritonitis it is as still as death; in occlusion of the bowel there is exaggerated peristaltic action. By this knowledge you are able to make your diagnosis. So it is important to make your diagnosis before you administer your opiates. I think that it is the most important duty in such cases—to make your diagnosis early, when you have the greatest chance of doing it correctly.

Dr. Latta: There seems to be a conflict between the surgeon and the general practitioner in these cases. The surgeon almost invariably insists upon purgation from start to finish, while the general physician is inclined to be conservative on the subject. It seems to me that if the surgeon has charge of the case from the outset and is situated so that he can interfere at any time, purgation is all right; but from the standpoint of the general practitioner, I cannot see any objection to the use of opium at first. I am inclined to believe that the administration of purgatives in the beginning is not quite logical. It is undoubtedly better to have a localized peritonitis in the region of the appendix than to have a general peritonitis. If you have a perforation of the appendix with local inflammation in that region, I do not see anything more rational than to give opium and push it thoroughly. If you give purgatives, you increase the peristaltic action, which undoubtedly has a tendency to increase the peritonitis. If you have a perforation, it has a tendency to increase the extravasation of the inflammatory material, and you run a more serious risk. I do not know whether the question will ever be settled between the surgeon and the general physician; but from the standpoint of the the general practitioner, who has never operated for appendicitis, with a record of some ten or twelve cases that have recovered by the use of opium, I still believe in administering opium quite freely in the beginning of these cases.

Dr. Hughes: I want to register my protest against the use of morphine in the early stages of appendicitis. When I commenced to practise medicine, we did give morphine, but it is not according to the modern idea of treatment. I believe it is all right to give morphine in certain stages of peritonitis, but not in the first stage, and I do not care how much pain your patient suffers.

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I think that 99 per cent. of the cases of uncomplicated peritonitis will get well if you succeed in purging thoroughly within the first 24 to 48 hours; after that, it is all right to give an anodyne. The vast majority or cases can be purged in 24 to 48 hours; it often takes me from 20 to 24 hours to get the bowels to move. I give the salines, of course, and calomel, and in addition to that I give plenty of rectal injections of water and soap, turpentine and borax; anything to get the bowels started. When once you get the bowels started, you can easily keep them running freely, and a vast majority of the cases will get well. I think a very large number die of peritonitis if you adopt the opium, instead of the purgation treatment.

Dr. McCrea: I have found that by the early use of an anodyne, we impress people with the idea that we are controlling the disease, when as a matter of fact, we are simply holding the dangerous symptoms out of sight. There are other things which you can use which will make it appear, at least, that you are doing a good deal to relieve pain and at the same time not mask the symptoms.

Dr. Leslie: I do not wish to be understood as saying that I would jump right into the use of opium the first thing. I think the first thing to do is to make your diagnosis. The next thing to do is to be sure that you can, without doing damage, get an opening in the bowel—be sure there is no obstruction there. But if you have not got a passage, and cannot get one without giving large doses of cathartics—because simple enemas will not accomplish the purpose—you are going to have trouble right there, because if you have got a spasmodic contraction of the bowel, the more cathartics you give the greater will be the contraction, and the greater the pain. I think as soon as you have made your diagnosis, altogether the best thing is to quiet your patient down at once, and relieve the muscular spasm, and relieve all contraction there that is possible to relieve. You will get a relaxation that will give you a satisfactory movement of the bowels in almost all cases. Now, a word in regard to intussusception. Of course, I did not have time in this paper to go into the subject as I might have done. I would not advise the wasting of time in intussusception by using injections, and keeping it up for any great length of time. I think it a good plan, and I would always try it first for a reasonable time, but do not lose precious time in these cases. If you have made a diagnosis of intussusception, the chances are that you will have to resort to surgery, and for that reason I would not jeopardize the patient's life by trying for a long time to relieve the condition by injections.

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Dr. J. W. May, Kansas City, Kas., read the following paper on "Illaqueation—A New Instrument for its Performance."

Aulus Cornelius Celsus, a physician of renown in his day, originated the operation known as illaqueation—a word derived form the Latin illaqueare—meaning to ensnare. This procedure was again brought into prominence by the noted oculist, Snellen, after it had almost been forgotten buried as it were under many centuries. Dr. Celsus, no doubt, was put to his wit's ends to avoid the serious consequences of distorted lashes, and it must be admitted that the oculists of the present day are still annoyed by the same condition. The many procedures divised for this defect is sufficient evidence that it is a difficult and oftimes seeming impossible task to perform. Electrolysis is also one of the methods for relief in this condition, and is to be recommended in many cases. Now, cases that I propose to treat by illaqueation are those known as trichiasis, *i.e.*, where we find a few straggling lashes that torment our patients to such an intolerable degree. Take, for instance, a case of entropiom that has been operated upon by any of the methods with good results for the time but sooner or later return with some of these intractable lashes distorted and irritating the cornea. Then, this is the class of cases that illaqueation is the proper operation. Not with the thread and needle, as the illustrions Dr. Celsus would have done, but with this instrument which I have named, "Illaqueator." Simple and easy, of rapid application, less painful than electrolysis, and requires no battery or expensive appliances. This instrument, as you will see, is a curved needle set in a handle and the eye is close to the point. Now, we simply put the lash in the eye of the needle and then thrust it through the lid, close to the root of the lash, directing it in such a way that it will be brought out in such a direction that it will not interfere with the cornea. With a little practice this can be done very rapidly and with permanent results. Each lash will be dealt with separately and as a matter of course a very little change will have to be made in the direction of many of them. Now in conclusion I will feel that something has been accomplished if my very brief paper brings out a full discussion of this bane of the ophthalmologist.

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DISCUSSION.

Dr. Minney: I have examined this instrument which he has presented, and I will say this: That I think it is one of the most practical, cleanest, and most useful instruments of its kind that I have ever seen. It is designed to overcome one of the most distressing, annoying and unpleasant conditions with which the oculist has to deal. Hertofore I have been using electrolysis, as occasion required it. You all know how difficult it is to destroy a hair. If we get the red hot needle down on the bulb and twist it around there, of course we will destroy the bulb. This little instrument will not do that. If by electrolysis we do not destroy it, we leave more or less of a cicatrix, which has a tendency to turn the lid in still more. This little instrument does not do that either. Again, with electrolysis, we find that it does produce a great deal of pain. Use cocain, if you please, but withal, if we do a complete operation, we have a great deal of pain. With this little instrument, the eye of the needle is slipped over the hair, the point is pushed up under the skin, and the hair is out of the way. The result has been accomplished. I am under great obligations to the doctor, indeed; I feel that this is the best invention of any age for the treatment of this trouble. I am sorry that I cannot pronounce the name of it.

Dr. Lindsay: This sounds very nice, and it may be all right. I hope it is, but it seems to me, just looking at it from an outside standpoint, that there is a possibility of infection of this little line of tissue through which the hair is carried. Unless the gentleman can tell us that he has used this instrument for a sufficient length of time to make sure that this infection will not occur; that there will be no necrosis of tissue; that these hairs will not fall back where they were, leaving a ragged, raw ulcerating edge, I think I am not ready to accept it. The fact that he tells us that with this instrument he can slip the hair in there, does not settle the proposition. You can all see how a hair would naturally be infected, and when you slip it through the tissue, you are very likely to infect the edge of the lid. Without some considerable length of experience, and some reports of cases, I think we should be very premature in accepting this as the great desideratum in this unnameable disease.

Dr. Longenecker: It is an invention of considerable importance to the oculist, because I do not know of anything that will give more trouble than this affection. Where we have a double row of cilia we have an affection where the ordinary means of opera-

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tion are not applicable, and even in the most severe cases of ectropium, our operations sometimes fail. So that, if we have the means of doing some good through the invention of this little instrument, I think it is worthy of great consideration. There will probably be some difficulty, though, in controlling the small cilia. They sometimes cause a great deal of annoyance. I should think it would be a very hard job to pass some of these very small ones through the needle. Whether we could succeed with them is, of course, more than we could tell unless we had some experience in the matter. As Dr. Minney has said the operation of electrolysis—following up these individual hairs—is a very difficult operation. Some of them you can hardly see unless you have a magnifying glass of high power, and then you are not always sure that you are following the canal into the bulb. I think Dr. May has done wrong, however, by not naming it.

Dr. May: I did name it—"Illaqueator."

Dr. Longenecker: I feel as though I should like to try it in certain cases, and if it accomplishes what Dr. May has said it will, I should certainly esteem it as a very valuable treatment.

Dr. May: In reply to Dr. Lindsay, I will say that I have used this only a very few times, but I have used the original method of Dr. Celsus, who practiced ophthalmology two thousand years ago in Rome or somewhere in that country—I don't know his street address—with good results, and I can readily see that there would be much less danger of infection from this needle than there would be from the use of the needle and thread both. It would be a neater operation; there would not be the same ragged effect that there would be by pushing the needle through and then the thread, and then pulling it back; there would be much less danger. Now, in regard to Dr. Lindsay's point—which was a good one—that it might act as a foreign body and set up an inflammation, and become infected, as it were, and necrosed, and also drop back. Now, Dr. Snelling, some years ago—quite a prominent oculist—brought this idea to the surface after a sleep of a good many centuries. I think he had good result with the illaqueation, the thread and needle. I think that a great many procedures have been overlooked, and if we were to delve down into the deep recesses of the past we might find something of great value and interest. Now, I do not claim that this is going to do everything, or that it is applicable in every case; that is out of the question. It is only the few straggling ones, as I said, that

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you have operated upon which return in a year or two or three or four years, straggling lashes that produce keratitis, and it may be, an ulceration of the cornea. Remove the cause by shutting these lashes up out of the way of the cornea, and the work is done.

Dr. J. W. Wilhoit, of St. George, Kas., read the following paper on "Tabes Spinalis, Tabes Dorsalis, and Locomotor Ataxia."

I hope that it is not expected by the members of this Society, that I am to make any new contribution to the subject of tabes in a brief paper like this. Our journals and text-books are all loaded with medical literature on this subject but it seems a rehearsal of what has been said and written along this line long before some of us were born. Tabes is a disease of the posterior column of the spinal cord attended by a slow wasting of the substance of the cord. It is also a systemic disease taking certain parts of the spinal cord and its roots and certain cranial nerves and is not a constitutianal disease but is limited to the nervous system. Its effects outside of the nervous system are only secondary. The disease is very chronic and progressive and while there are some exceptions to this rule especially those of traumatic causation, the largest number run a prolonged course and are marked by three stages:

1. Prodromal or pre-ataxic stage.
2. The developed or ataxic stage.
3. The degenerative or stage of decline.

The spinal ganglionic cell with its central and peripheral processes forms a nerve unit neuron and is called the peripheral sensory neuron. It is this neuron that is the original and main seat of the disease. Tabes often attacks peripheral motor neurosis causing ocular palsies and muscular atrophies. It also attacks the cortical substance of the brain cells. Tabes is not an inflammation, neither is it the result of an inflammation. It is a primary atrophy or decay attacking the tissues itself. We are ignorant as to what nature of this primary and steady decay is. Tabes is a disease of adult life, occurring in a majority of the cases, from the thirtieth to the fortieth years, and it occurs ten times oftener in men than in women. Sometimes cases are seen in young subjects. It is said to be a rare disease in the negro. If syphilis is the chief cause, no doubt the negro would

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be as liable as any of us, as some writers claim that syphilis is the chief cause of tabes, and if we did not have syphilis, we would not have tabes. But I am of the opinion that we have other causes besides specific.

There is no doubt but what over-exertion and getting wet and being exposed to cold and hard work have something to do in bringing about an attack of tabes, especially so when a predisposition exists. Traumatic causes are also common and a person after having had a fall often rapidly develops tabes, and sometimes it is a long time after the fall before it begins to develop. It was formerly believed that excesses in sexual intercourse was the prime cause of tabes but I think such cases are very rare. Tabes is not hereditary only in very rare cases, but sometimes is more common in families who have all kinds of neuroses such as epilepsy, hysteria, melancholia, migraine, etc. I am led to believe that one of the main reasons that tabes occurs in men oftener than in women is on account of greater exposure and a more laborious life. It must be confessed that in some cases which, however, is a small fraction of the whole number, no etiological factor can be found, neither hereditary nor exciting causes nor syphilitic infection.

In summing up all the causes of tabes I would say that many of them are just a matter of conjecture, and, like many other diseases, we know but little about their etiology.

The symptoms of tabes are as follows: In the pre-ataxic stage pains of a sharp stabbing character are complained of in the legs and they may be associated with a hot, burning feeling. They may occur at irregular intervals, and are more liable to come on when the health is impaired. The nerves supplying the muscles of the eyes are most commonly affected; the facial are most rarely attacked; the most frequent lesion of the optic nerve in tabes is atrophy or gray degeneration.

Usually both eyes are affected at the same time, or one follows the other in a short interval. The patients complain that everything seems to be covered by a gray veil. The loss of vision is very rapid at first, and later becomes slower and complete. Amauroses happens much later than one would expect from the onset of the disease. Ptosis is a common symptom in the pre-ataxic stage, which may be double or single, and double vision is usually complained of by many. The loss of vision is progressive and generally ends in total blindness. Pains of a sharp, stabbing character are among the first symptoms of the pre-ataxic stage

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and those pains are usually in the lower extremities; at the same time loss of the knee-jerk is also observed. All persons in good health have a knee-jerk, except in very rare cases when it may be absent. There is often at the same time a gradual loss of sexual power. One of the first symptoms in the ataxic stage is the patient being unable to get around in the dark or to shut his eyes and try to stand up straight or turn around suddenly. In walking, the legs are thrown out and raised too high and brought down in a stamping manner, usually the heel striking the ground first or the whole sole comes in contact with the ground. This gait is very characteristic and is not observed in any other disease. The visceral symptoms are also common. I met a case once of tabes who had spells of vomiting and severe pains in the stomach long before any other symptoms developed. Nothing would have any effect towards checking this uncontrolable vomiting, and it would cease with its own accord. The person was treated for catarrh of the stomach. Tabes often causes trouble in micturition, and these subjects hesitate sometimes before passing water. At times there may be complete retention of urine that may lead to systitis, and in other cases he wants to urinate often, and is not willing to go anywhere on a long journey for fear he cannot get a chance to pass water when the urgent demand comes on him. Some of those subjects have an uncontrolable diarrhea that we are in complete ignorance of as to its cause. This diarrhea may stop without the use of any medicinal agents and may be followed by a persistent constipation, but I must add that the majority of cases of tabes are subject to constipation. I might draw a picture of this disease by taking any middle-aged person who begins to complain of slight fatigue on walking and occasional pains in the lower extremities, and in spite of all treatment the pains continue and get so severe that they disturb the patient's rest at night, or even render sleep impossible. He has the eye trouble, as above alluded to, appetite poor, and begins to stagger when he walks, and has vomiting spells, and he has or has not had syphilis, and the other symptoms referred to above, one may expect the onset of tabes.

The diagnosis of tabes in some cases is easy but in other cases it is very difficult, and I think many cases of tabes are treated with the doctor being in complete ignorance as to what his patient is suffering from. The principal diseases that may be confounded with tabes, are syphilis, diabetes and hysteria, and it is

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possible to consider a severe case of neurasthenia for a long time as one of tabes. It is important to keep in mind that many symptoms occurring in tabes are also found in other diseases, and one should never be too sure of his diagnosis. Ataxia sometimes follows diphtheria, neuritis and other troubles. Tabes is a very slow disease, as a rule lasting 10, 15, 20 or more years, and its natural end is generally paralysis and death. We have plenty of time as a rule to get a correct diagnosis of our case unless some intercurrent disease should carry him off. Some cases of tabes are very hopeful and look on the bright side of everything, while the majority are irritable and cross. There is no disease in which the physician should be more honest and frank with his patient, *i.e.*, to tell him that his case is a hopeless one and that he cannot expect a cure only in rare cases. Tabes is a very fatal affection and I do not believe that there was ever a case cured by the use of drugs alone. Some few cases of a syphilitic nature, are cured provided the syphilis is of recent origin, not longer than a year. Some may be improved for a while but they soon relapse and are worse than ever. Optic nerve atrophy is a bad symptom. A disease with such an unfavorable prognosis it would hardly be expected to give any medicinal agents expecting any very great therapeutical effects. In regard to the treatment, I want to say that I believe that rest is of first importance in this disease. No doubt this will not agree with many of our text-books, but it does seem to me that a disease that is found in the posterior column of the spinal cord, and one that interferes so much with the locomotion of the body, that a complete rest of those parts would be the most important part of the treatment. I believe that the person should be confined to his bed and given a good and nutritious diet, and the mind should be at rest the same as the body. I know that the text-books tell us to give large and increased doses of iodide potassii, especially if we have a syphilitic history.

Some have claimed to have accomplished much with nitrate of silver; others think that cod liver oil and the phosphites have done much good in their hands. Althaus claims to have completely cured two cases with drachm doses of liquid extract of ergot, three times a day, continued for six or eight months, and it is reasonable to believe that those cases might have recovered anyway with complete rest in that length of time. One author says that he "would trust to a liberal amount of stimulants rather than to sedatives for the relief of pain." There is no doubt but

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what the motor power is chiefly at fault in this disease and my opinion is to give a liberal allowance of stimulants would interfere more with his walking than the disease. I believe that stimulants as a rule are contraindicated in tabes, notwithstanding it is claimed that alcohol drunkenness does not enter into the etiology of tabes. Electricity has been recommended and no doubt has done good in some cases. Strychnia has also been used, and many other drugs have been tried, but as I said in the beginning, a complete *rest* of all the nerves and muscles in this disease, and an equable temperature, and the proper diet, and regular habits, will accomplish far more than drugs. I believe he should wear flannel and keep himself from being exposed to cold drafts of air. I wish to say in conclusion that I may be a little skeptical on this subject, but I hope that the discussion of this paper will dig up something new, and that we may all get some new light on this important subject; but I am sure that those who have had experience in cases of tabes will bear me out in my statements.

DISCUSSION.

Dr. Lindsay: there are some points in the paper which seem to me to be a little confusing. The principal symptom, according to my experience, is the Argyll Robertson pupil. I have never seen a case of complete blindness, loss of sight, such as he describes in the pre-ataxic stage. The statement was made in the paper that this disease is principally a motor disorder. We have a loss of the automatic motor function in the interference between the posterior and anterior columns of the cord; we have here in the line of connection between the columns of Goll and Burdack the seat of organic degeneration, the posterior spinal nerve roots being also affected. It is not because this is a motor disorder, as the gentleman states in his paper, but the cause is the loss of the automatic function, the automatic relation between the posterior and anterior nerve roots, by which we do not have proper motor power, that is, proper co-ordination. One of the principal symptoms in this disease of which the paper does not speak, is the watching of the feet in walking. The writer has gone over a number of the prominent symptoms of the disease, but some have been omitted. The girdle sensation about the waist is an important one. I think the diagnosis is comparatively easy so far as that goes. The four principal symptoms are, the lightning pains, the Argyll Robertson pupil, the ataxic gait, and the loss of the patellar tendon reflex. Some

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of our writers say that the absence of any one of these four symptoms may lead us to well doubt the diagnosis. I think it is well to discuss a subject of this kind. It is a common disease, but so far as my experience goes, I have never been able to cure a case of locomotor ataxia. We hear of cases being cured through suspension. I find that rest is the most important element in the treatment. To stretch the spinal cord, it can best be done by forming a hoop of the back, and rolling it out. In this way you can stretch the cord more than you can by suspension of the whole weight of the body. I have had good results from suspension and good results from static electricity, but I cannot point to any cure of the disease, and have no new remedy to offer.

Dr. Punton: The subject of locomotor ataxia is a very interesting one, not only to the neurologist, but to the general practitioner as well, because, as a general rule, it comes under the observation of the family physican long before it comes under the observation of the specialist; but it is my judgment, that when it has reached a point that you can see it, and recognize it in its incipient stage, that it is one of the most incurable of all the affections of the nervous system. The paper has treated the subject in a very lucid way. At the same time, I think that a majority of the best authorities, both of this country and of Europe, recognize that 90 per cent. of the entire number of cases of locomotor ataxia are associated with syphilis. I am, however, inclined to believe that here and there is a case in which the presence of syphilis is an exceedingly doubtful factor, and yet, because we do not find any special history, it does not necessarily follow that there is no syphilis in the case. It has become common in the practice of medicine, as soon as the diagnosis is made, to resort to iodide of potash and mercury; they are the well-known remedies, and have been for years, for locomotor ataxia; but I am very glad to see that today there is a tendency to break away from some of our bad habits of the past, and we are now looking for better methods. It is the prevailing opinion that has been tried and found wanting in many cases, not only not curing the disease, but failing to ameliorate some of the symptoms. In fact, a well-known neurologist of New York, just a short time ago, said that he believed that iodide of potash, when used continually in the treatment of this disease, had a tendency to bring about more serious symptoms which developed later on in the disease. Now, as to symptoms: The Doctor, I think, in his paper, fails to bring out prominently the curative stage of this

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disease. As I have stated before, I believe that the incipient stage is the stage in which it should be detected, in order to get the best results. In fact after it has reached the ataxic stage, it is doubtful in my mind whether we can effect a cure; but I think if we can recognize it in the pre-ataxic stage, there is hope of a cure. Now, I think the doctor fails. as I say, to bring out prominently the more important factors, by which we can make a diagnosis of locomotor ataxia in its incipient stage. Very many cases of locomotor ataxia, first go to the oculist. The first symptom of which the patient complains at that time is diplopia and and by the adjustment of certain glasses, the oculist has failed to recognize one of the most important initial symptoms of locomotor ataxia. Presently the patient will find his way to the genito-urinary surgeon complaining of retarded micturition, and the genito-urinary surgeon will treat him for that and fail to recognize that there is an indication of locomotor ataxia. Now, in my judgment, these are the two most important elements in the incipient stage when they are conjoined, and as a matter of fact they are often found prior to any disturbance of automatic centers in the brain. The ataxic symptoms go on, the loss of the patelar reflexes, one of the earlier symptoms of the disease, comes on even subsequent to those I have already named. So I think it is very important that we should pay close attention to the early symptoms of the incipient stage, because that is the only time when there can be given hope of a cure. Now, I must take issue with the Doctor in his pathology of the disease. I am satisfied today that locomotor ataxia can exist without affecting the spinal cord. That may seem a somewhat heretical statement but as a matter of fact it has been demonstrated beyond a doubt under the miscroscope that locomotor ataxia does exist without affecting the spinal cord; that it is now considered by the best histologists that locomotor ataxia is simply a disease, in the incipient stage, of the sensory neuron endings, without any affection of the cord, but that it does effect the cord when it has become thoroughly developed, and then I think it becomes incurable; but so long as it can be kept confined to these sensory neuron endings, there is certainly more hope of a cure. It is now regarded as due to the lack of nutrition of those centers, those parts which I have named.

Dr. Minney: I have had a number of cases of the kind which Dr. Punton mentions under my observation, and the charge which he makes is certainly founded on fact. But in these cases

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where we have found diplopia, we have always been on our guard, and so far as I know, we have not omitted to detect it. I have not had cases under my observation, or at least none long enough to find a case which resulted in total blindness. Probably the patient did not live long enough, or at least has not been under observation long enough, to allow it. But that it does interfere of course, we all know. There is this that I do not know: Why in some cases we find the optic nerve atrophied, and in other cases there is no indication of it at all. Now, Dr. Lindsay has forgotten something, but I feel this way: That it is a mistake to tell a patient, when you diagnose a case, that he will never get well. That is wrong in my judgment. I have the greatest respect for Dr. Wilhoit's opinion in the matter; he is one of our best men, and, maybe, I misunderstood him. Fourteen years ago a case came under my observation; I had Dr. Lindsay and Dr. Ward in the case. I had removed one of the patient's eyes He had all the symptoms of locomotor ataxia; in fact he had the disease. There was the girdle like feeling around his waist; there was the absence of patellar reflexes; there was that condition in walking, and there was the Argyll Robertson pupil. There was no organic trouble in his right eye; it was confined at that time to his left eye. There was no lesion in his right eye. The sight was a little impaired. But to make a long story short, after two or three years treatment, that man seemed to be well; he is living today and is in business here in this town, and so far as I can see is a well man. Now, that is one case out of probably half a dozen which I have seen, hence I think it is wrong to tell a patient in the incipient stage that he will not get well.

Dr. Punton: I want to say a word on the subject with which Dr. Minney closed his remarks. I believe that honesty is the best policy, and I believe that when you are thoroughly satisfied that you have an incurable case, that it is your duty as a physician to your patient or at least to his friends, to tell them so. You are not justified in my judgment in holding out a false hope to a patient that he will get well when you have no authority whatever upon which to base that statement. It is my experience that a medical man is damned if he does, and he is dammed if he doesn't. If you tell a man that he is going to die, his friends come to you and say, "Oh you never ought to have told him." But if you give hope when you feel none yourself, they come to you and say, "Oh doctor, why didn't you tell us he was going to

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die." I have come to the conclusion that there is only one way to deal with people in such cases, and that is the truthful way.

Dr. Minney: I said that in the incipient stage it was wrong to give out the statement that the patient had no chance to get well. I believe as completely as Dr. Punton that we should be honest; that goes without saying; it is always understood. I do not wish to cast any reflection upon the Doctor, but I think his remarks are a little out of order; they should not be heard in a meeting of this kind.

Dr. Wilhoit: I am pleased with the able remarks made by members of the Society, but I am satisfied that some of them do not understand me. My statement about being frank with the patient and telling him that nothing could be done, did not apply to the pre-ataxic stage of the disease. I would not tell him at that time that he could not get well because there might be some slip in the diagnosis; but when the disease is fully developed and we know that it is locomotor ataxia, I think it is honest, and professional and fair to make the fact known—for every practitioner to come out and say that he cannot do anything; that the disease is beyond medical skill. Now, I did not expect by this paper, to make any complete contribution on this subject; I only touched upon a few points hoping to learn something from the members of the Society. Dr. Punton spoke about the diagnosis; he said it was important to have your diagnosis in the early stage, and that if you had the diagnosis made in the early stage, perhaps it would do good and you could do something toward curing the patient. Well, with a disease that is incurable, I do not see how or wherein it would benefit us if we did make a correct diagnosis in the beginning, except as it might enable us to tell the patient frankly just what the disease was, and what his prospects were. According to the best medical authorities which I have been able to find, locomotor ataxia is an incurable disease. It is claimed in medical literature that many of these cases result in total blindness, but I do not want to speak of anything except what I have seen in my own experience, and I have never seen any such cases. It is my judgment that those cases that have their origin in syphilis are curable if you begin in time, but after they have run on for a year or two years, I don't believe that iodide of potassium or any alterative will reach the case.

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Dr. Geo. A. Boyle, Louisburg, Kas., read the following paper on the "Treatment of Fractures with Report of Cases."

I have chosen this subject, not because I expect to be able to present anything specially new or startling, nor because I consider myself an expert in this line of a surgeon's work, but because I consider it a subject which ought to interest the general practitioner as well as the man who limits his practice to surgery. Most of us are general practitioners, and I am sure we must all feel interested in a branch of our work which furnishes us with so many interesting and often difficult cases for treatment. Most surgical work which presents itself to me is very welcome, whether it be simple plastic work or operative work of almost any kind which must be done by the general practitioner, but when it comes to fractures, I draw the line, and often wish that the "other fellow" had the case. I assure you I do not "point with pride" to every case of fracture I have ever treated, neither am I ashamed of my results. And yet I have not always had what I considered perfect results by any means. I have never had a suit for malpractice on my hands, on account of my treatment of a fracture, nor for any other reason for that matter, but I have heard some talk of such suit in two of my cases, as I shall mention in my report of cases later. But I know of no line of surgical work nor no class of cases, the results of treatment of which give rise to so many malpractice suits as cases of fractured bones. My memory may be deficient, but so far as it serves me, every malpractice suit to which I have been summoned as a witness, in fact every such suit which I have been cognizant of in our community, has been a suit over the result of treatment of a broken bone. Those of you who live within a radius of one hundred to one hundred and fifty miles of Kansas City, or any other large city, will bear me out in this, that most of the major surgery of your community goes to Kansas City or some other large city. We who practice in smaller places, occasionally get an operation for appendicitis or excision of a carcinomatous breast, or the amputation of a limb for some chronic trouble, but it is only in emergency cases; but most of the cases of accidents come to us for treatment. And my experience has been that one of the most common accidents met with among all classes, but more especially among the laboring classes, is fracture of bones. And most of our clientelle comes from the laboring classes. There-

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fore, I say that whether we are experts in treating fractures or not, whether we enjoy this class of surgical work or not, whether the results we get are good or bad, all country practitioners have a great many fractures to treat.

Believing these facts to be true, or, rather believing these statements to be facts, is the reason why I said in the beginning that this was a subject which ought to interest us all. In fact, I believe that this subject does interest all of us. And I believe also that one of the best ways to become proficient in any line of work is to thoroughly understand that work, and one of the very best ways to do this is by an exchange of opinions with others, and especially with those who from personal experience have gained wisdom. These are some of the reasons why this paper is now being inflicted upon you.

I shall write more from the standpoint of a clinical student than that of a teacher. My treatment is principally that which I was taught when a student, and, if it is not the best or not thoroughly up-to-date, I shall expect to profit much by your experience with better methods or appliances. I have in most cases improvised splints, fracture boxes, etc., to suit the case and the occasion. I have often thought that I should get a set of fibre splints, which I believe to be very useful—but like the Arkansas Traveler's experience, when I have no case on hand I do not need the splints, and so neglect to order, and when I get a case of fracture I have no time to order.

It is the bones of the extremities, the long bones of the body that are fractured most frequently. I think I am safe in saying that nine out of ten of the cases of fracture we are called upon to treat are broken arms or legs. As this paper is to deal with treatment only I shall say nothing regarding the classifications nor kinds of fractures as such, I believe that that dressing splint or appliance which is lightest in weight, most comfortable for the patient, and which will best retain the fractured bones in coaptation, is the best to use. If the fracture is a compound one difficulty is greatly increased because the wound is often a septic one necessitating open treatment. The dressing or appliance used must be such as to admit the wound being frequently seen and dressed if necessary.

When called to see a case of a fractured bone or bones the first thing to determine is the exact nature of the injury, to ascertain so far as possible what bones are broken and just where the fracture is located, and also to decide upon what kind of a splint or

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appliance to use. In order to determine all of this it is generally necessary to administer an anesthetic, though in most cases the kind of dressing can be determined at a glance, and the splint can then be prepared and so far as possible, adjusted or fitted to the sound limb so that when the patient is anesthetized, the fragments may be properly coapted or "set," and the splints and all dressings applied while he is under the anesthetic. A great deal depends upon having good and competent assistance. And right here I want to emphasize that whenever possible I ask for and insist on having another physician called in consultation. I do this to protect myself and if possible prevent a malpractice suit. I don't know how it is in other parts of Kansas or in other States, but in our community we have a few men who are called lawyers, who are ever ready to take a case for a contingent fee. If a man has sustained a fracture and the treatment of his case has not given a satisfactory result, or if he imagines or some of his good neighbors tell him that it is not a perfect result, these men are ready to take his case and bring a suit for heavy damages against the physician—the lawyer agreeing to take half of what he can get out of the doctor as his fee. The patient may be absolutely irresponsible and worthless, but he simply takes the "pauper oath" and thus escapes giving bond for costs of the suit. The case is usually decided in favor of the surgeon. The lawyer, so called, gets a little notoriety out of the case; the patient gets what he calls "satisfaction" out of the doctor, and the doctor, as stated, generally wins the case; but he must pay his own attorney and witnesses, and if he gets off for less than one hundred and fifty to two hundred dollars he may thank his lucky stars. In most cases of simple fracture, and whenever possible in compound fractures, I use plaster paris or silicate dressing, but I am afraid to apply this dressing till the eighth or tenth day, or until swelling subsides. If the fracture is one of one or both bones of the leg below the knee, I place it in a fracture box well padded with cotton, and let it remain in this box till the ninth or tenth day or the swelling subsides, then I apply a plaster of paris dressing and allow it to remain on for from three to five weeks, according to the age of the patient and the nature of the fracture. Then I cut the plaster cast in front and pry it open so as to allow the leg to be removed and washed and to make passive motion of joints. The plaster is again applied and held in place by a bandage, and the patient instructed to remove it every day and to make passive motion. He wears this

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plaster cast for from one to three weeks longer, but has been taught to use the leg more and more every day. If it is a fracture of the femur, I apply adhesive strips to sides of leg, and over these a roller bandage, the adhesive strips passing over a board at sole of patient's foot, and a rope from this board passing over foot of bed sustains weights for extension, the patient being placed on his back with pillows and later sand bags supporting sides of thigh. In some cases I have applied a plaster paris dressing to fractures of femur in adults, and with good results; in others, especially very old people, I have simply continued the dressing just mentioned having the foot of bed elevated counter extension. In fractures of femur in children, I have always applied plaster paris. In fractures of forearm, I use a Bonds' splint, or a modification of it, with or without a posterior splint, as I think the occasion demands, placing a pad in palm of hand, and hand well abducted laterally. If, after a week or ten days I am satisfied that this splint will be sufficient, I just continue using it till repair is complete, if not so satisfied I apply plaster paris as in fractures of the leg. Fractures at or near the elbow joint I have always dressed with both anterior and posterior angular splints, and, later plaster paris in most cases. I have never dressed a fracture at elbow in a straight splint, lest the joint should be permanently anchylosed.

An anchylosed elbow joint, if at right angles makes a very useful arm; but a stiff arm perfectly straight is not a very useful member. On account of action of triceps muscle a fracture of olecranon must be dressed in straight or nearly straight position. In case of fracture of humerus at upper end, or of anatomical neck, I have used posterior angular splint, and, in addition, a shoulder cap. Fractures of clavicle have been very annoying to me. I have found great difficulty in preventing overlapping of fractured ends, and more or less deformity. These fractures I have dressed with an axillary pad, sometimes with and sometimes without a shoulder cap, with the arm bound to side, forearm across chest, held by a Velpeau's or Dessault's or similar bandage. I usually carry with me, when called to see a fracture, some heavy binder's board, and especially among children and young people I find it an admirable dressing. After cutting out the form of splint desired, I wet it in warm or cold water. It can then be molded into any desired shape, and held neatly in place by a roller bandage. When it dries it becomes rigid and strong, as well as quite light and comfortable. I also keep on hand a

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few anterior and posterior angular splints of different sizes, made from perforated tin and some from sole leather. I aim to see my patients once or twice a week, and always direct them to notify me if much swelling appears, or if suffering severe pain at any time. In reporting a few cases I shall not mention cases of simple fracture in which results were practically perfect, and which caused me no worry nor trouble whatever.

Case 1—Mrs. S. J. D., widow, aged 56. On September 5, 1888, she fell from a porch and sustained a Colle's fracture of right arm. I easily set the broken bones—both radius and ulna being fractured—and placed arm on a Bond's splint. There was very little swelling or pain. I saw the case every other day till September 10, then not till September 21, just 16 days from date of injury. At that time it was doing so well that I told her to report to me in one week. This she failed to do and I never saw her again till early in October, when she had discarded the splint and was using the hand freely, but the hand was abducted laterally, or towards radial side, making the styloid process of ulna very prominent. While this is a useful arm it is far from being a perfect result. The patient has never been dissatisfied, but I have. Every time I see that old lady, that crooked arm seems to be wonderfully prominent. Although I had practiced for nearly two years, this was my first case of fracture of the forearm, and it taught me this lesson: To always keep my fracture cases under surveilance till I was satisfied to dismiss them—and never to let the patient be the judge of when to remove splints and dressings. There may have been a rupture of the internal lateral ligament in this case.

Case 2—Mrs. Z. D., aged 60. On December 20, 1896, while working about her cook stove she suddenly became "dizzy and turned blind," as she expressed it, and fell forward against the stove. One of her neighbors across the street heard her fall and ran over and found her lying on the floor unconscious. I was sent for and arrived in about ten minutes. She had fainted, but was restored to consciousness. On examination under chloroform anesthesia I found a Colle's fracture of right arm. This was dressed on a Bond's splint made for the occasion. December 28 I applied plaster paris dressing. January 26 I removed plaster and found excellent union of bones, but the wrist, hand and fingers were swollen and quite stiff. I made passive motion, which she said was quite painful. I directed her to remove the splint at night, but to wear it during the day time for another week or so, but to

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bathe the arm daily in hot water, and make passive motion of wrist and fingers, and to perform massage of the swollen parts. I also told her to report to me in a week or ten days if the swelling had not disappeared and stiffness improved. She never reported to me at all, but after three or four weeks I heard that her good son had come home and told her that I had ruined her arm, and tried to get her husband to sue me. I lost no time in going to see her and found her still wearing the splint, and the parts just as badly swollen and stiff as before. The fingers had a shining appearance, resembling a case of rheumatoid arthritis. I asked her if she had been using her arm and doing as I had instructed her to do. She said: "Doctor, I just can't use my arm, it hurts me so to move it."

I explained to her that hurt or not hurt she *must* use it. I assured her that if her sound arm had been tied up in a splint and not used for the same length of time, it, too, would be swollen, stiff and useless. I told her plainly that it was her own fault that it was still in such condition, and again insisted upon daily bathing, passive and active motion and massage and prescribed an eight ounce bottle of liniment, with directions to rub in thoroughly after each bathing, assuring her that the liniment would do the work if *rubbed in thoroughly enough.* In a few weeks she was using her arm again all right; but there is still some restriction of motion. The malpractice suit was never mentioned by them to me, and her husband paid my bill and they are satisfied. I am not. I really think I should have had a better result without plaster dressing in this case. It taught me this additional lesson: to be sure and see that the patient uses the fractured limb when the proper time comes.

Case 3—Mrs. B., aged 74, widow, totally blind. On June 6, 1890, she was coming down stairs, and, when within two steps of foot of stairs, she thought she had reached the floor and stepped accordingly, falling forward to the floor. She was a large, fleshy woman, about 5 feet, 10 inches tall, weighing 225 pounds. My confrere, Dr. E. W. Riley, now deceased, was called but was out of town, so I was called to see her. I found her suffering severe pain in right hip and a good deal of shock. Her leg was shortened nearly 2 inches, with eversion of foot, and I easily obtained crepitus. I told the people I must have professional assistance, and gave hypodermatic injection of morphine and strychnine.

On the way back to my office I met Dr. Riley, to whom I ex-

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plained the case, and we went to his office and secured adhesive plaster and bandage and returned to house of patient. Under chloroform we found a fracture of neck of femur, whether intracapsular or not we could not determine. We applied adhesive strips and bandage to leg and the following day, with the assistance of a carpenter, we made and placed her on a fracture bed. She made a good recovery, and in less than six months she could move about the house by using a crutch and cane. There is nothing remarkable about this case except that on account of her age and utter helplessness her recovery was hardly to be expected.

Case 4—A. B., farmer, aged 53. On May 4, 1889, a boy rode up to my office very much excited, with his horse covered with foam, and said his father had been leading a mule and that the mule had jerked him down and had either broken or dislocated his leg at hip. He said: "He wants you just as quick as you can git there," and he added, "Doc, pap said to tell you to bring your 'pellicans' along." I told him all right, as I supposed he meant pulleys. I was then practicing in partnership with Dr. J. D. Bryan, now of Ottawa, who at that time was absent in St. Louis attending a meeting of the National Association of Railway Surgeons. This was my first call to such an injury. In my recent hospital experience in Philadelphia I had often seen three or four of my professors working hard for an hour or more with their coats off endeavoring to reduce a dislocated hip, and I assure you I went to see this case with a good deal of trepidation.

It was five miles from town, and I took a young man, a jeweler, with me, who often assisted me in giving an anesthetic. I found patient in bed and suffering some pain, but not severe, pain being located in left hip. On removing his clothing I found absolutely no shortening, and neither inverson nor eversion of foot, but he complained of great pain while undressing him, and on attempting to move his leg it was so extremely painful to him that I was compelled to administer chloroform before I could even hint at diagnosis. Under chloroform I easily obtained crepitus and preternatural mobility, and diagnosed intracapsular fracture of head of femur. I got a piece of board long enough to extend from his axilla to his foot, and after padding it I bound his leg from foot to body to this board, and also bound the board to his body. The following day Dr. Bryan returned from St. Louis, and we both went to see the patient. There being no shortening, no deformity and no displacement, Dr. Bryan feared I might be mistaken in my diagnosis. I there-

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fore again anesthetized the patient, when the doctor quickly confirmed my diagnosis and complimented me upon being correct. We readjusted my board and allowed it to remain till May 12, or eight days, when we applied plaster paris cast from toes to body, and also around patient's body, half way up to axilla. On June 15, we removed or cut open the plaster, and in three months he was able to walk around with a cane, and came to town and paid his bill. In six months he discarded his cane entirely, but always walked with a slight limp.

I report this case because of its interest to me in having practically no symptom but the crepitus to aid in diagnosis, and also because I never saw a plaster paris dressing applied in a similar case in an adult.

Case 5—Mrs. E. H., widow, aged 77. On May 12, 1893, a boy came to my office in the evening, and asked me to go two and one-half miles into the country to see old Mrs. H., who had fallen through an old-fashioned trap door into her cellar, a distance of seven or eight feet, and was badly injured. I asked him if any bones were broken and he said he did not know but they thought both her legs were broken. I told the messenger I would go, but would take Dr. Riley with me as I knew I should need help. Under anesthesia we found both bones of left forearm fractured near the wrist, a Pott's fracture of left leg, just above ankle joint, and right femur fractured near head of bone and also about junction of upper and middle third. Arm was dressed in Bond's splint, left leg in fracture box, and adhesive strips and bandage, with extension and counter extension applied to right leg. A fracture bed was made on which she was placed the following day. Arm and left leg did well, but June 15, there being no signs of union of right femur, we applied a plaster paris cast, also adhesive strips and extension. Her condition was bad most of the time. She suffered from extreme constipation, with more or less fever every day. June 18, I left her in charge of a young physician, Dr. Vaughn, who took my practice while I went to the World's Fair. Upon my return I saw her again July 12, but found no improvement in her condition. On removal of plaster paris cast, we found still no union of bone, and early in August she died. This case was somewhat remarkable from the fact that the tibia and fibula of left leg and ulna and radius of left arma all united so well, but the fractured femur in right leg absolutely refused to unite.

Case 6—J. S. S., farmer, aged 36. On October 24, 1893, he was

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driving in an open buggy, when his horse ran away and threw him out of the buggy fracturing his right tibia about one inch above ankle joint, and fibula about three inches higher. It was a compound, comminuted fracture, the end of tibia having stuck some inches into the ground. The man was intoxicated at the time of injury, but when I arrived he was quite well sobered up—this was perhaps two hours after the injury. He was hurt four and one-half miles from town, and two and one-half miles from his own home, but very near a neighbor's house. He was carried into this house where I found him about eight o'clock p.m. I had taken an old physician, Dr. McMahan, with me. Hemorrhage had been quite free, and I found the wound literally full of dirt. I removed a piece of his pantaloons which had been drawn into the wound on the sharp end of fractured tibia. I removed several detached fragments and spiculæ of bone, made a counter-opening on posterior aspect of leg, and washed the wound out thoroughly with a one to one thousand solution of bichloride of mercury, applied a gauze dressing and placed leg in a fracture box. Next day he was placed on a mattress and hauled home in a spring wagon, Dr. McMahan being present as I was called across the line into Missouri. That evening, October 25, I went to St. Louis to attend a meeting of the Southwestern Association Railway Surgeons, and, while there, I reported this case and asked for assistance in handling or managing it. Many suggestions were made to me, but I am indebted to Dr. Johnson, of Rolla, Mo., who was present, and who suggested a plan of dressing which he had devised and used in a similar case. On October 29 I saw the case with Dr. McMahan, and we found the patient's father, an old eclectic physician, had come to see him and had removed all our dressings to examine it, and, the patient claiming that the dressings were too tight, he had the fracture box lying open with the foot leaning over to right side. He said it felt comfortable to him that way. Whether due to our not being able to thoroughly cleanse it in the first place, or to being opened and handled both by patient himself and his father, with hands which were far from being aseptic, I do not know, but I do know that we found the wound suppurating very freely. I called Dr. McMahan out and told him I would have nothing more to do with the case—that we never could get any kind of result with patient himself and others removing our dressings. But the old doctor (McMahan) talked to me in a fatherly way, and said he would "stay right by me," as he expressed it, that he was

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a witness to what we had done and what patient had undone, etc., and that if I would just "keep cool" we would have a fine result. So I finally consented and we dressed it again as best we could.

On November 6, we followed Dr. Johnson's plan. That is, we placed a thin plaster of paris cast over patient's foot, up to near wound on ankle, and another plaster dressing around his leg, extending from about two inches above the wound up above his knee. We then took three pieces of heavy hoop iron, the kind used on top of farmer's wagon beds, cut to desired length, and bent one to conform to dorsum of foot, curved out like a trunk handle over wound, and then upper end of iron conforming to front of leg. The pieces were made to fit the sides of foot and of leg, being curved outward over site of wound, same as anterior iron. Then more plaster was applied over these irons, making them fast to foot below and to leg above the wound, thus holding the broken leg as firmly as if in a vise, and also allowing plenty of room to dress the open suppurating wound. This dressing was worn till February 2, '94, or about three months. Firm bony union had taken place, but a sinus remained open, and from time to time small sequestræ of bone were removed. The patient finally went to Kansas City, where his father lived, and drifted into the hands of Dr. J bez N. Jackson. He told Dr. Jackson that he was going to sue me for malpractice, but Dr. Jackson told him he ought to be well satisfied to have any leg at all. It is useless for me to tell you that Dr. Jackson holds a great big warm place in my heart—for he doubtless saved me the worry and expense of a suit. I should state that in March old Dr. McMahan took pneumonia and died, thus leaving me without my professional witness. It was nearly two years before this man's leg was fully healed, and now it is about one inch shorter than its fellow, and is not as strong as it formerly was. He walks with a cane and it is a fairly useful limb—much better than any artificial limb would be. This case gave me more trouble and worry than any case I have ever treated, and, I assure you, I am not proud of the result. I shall just briefly mention one more case, which was very similar to this one, but shows much better results.

Case 8—H. W., farmer, aged 42. On July 5, 1898, he was driving home from town, in a state of at least partial intoxication, riding on the running gear of a lumber wagon, his feet hanging

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over in front of the brake beam. On driving over a stump on a timber road, his foot caught on the stump and was bent back under the brake beam, breaking both bones of leg about two and one-half inches above the ankle joint. This sobered him up so that he turned around and drove back towards town. But when about two miles from town he became weak and called to and aroused a farmer living near the road. This farmer got up and found him very weak and gave him freely of whisky, and brought him to my house about midnight. I had him taken to my office when I was surprised to find his shoe full of blood, and a compound fracture wound being on anterior and inner aspect of tibia. I sent at once for Dr. C. N. Starry, a young homeopathist, the only other physician in town, but an up-to-date surgeon and a gentleman. We cleansed the wound antiseptically, removing several splinters of detached bone, covered with an antiseptic gauze dressing, and placed leg in a fracture box and kept patient in office till morning.

Next day I sent him home on a mattress in a spring wagon, five miles, Dr. Starry accompanying him. We had not one drop of pus. On July 13, we had applied plaster dressing using a piece of perforated tin with a hole one and one-half inches in diameter directly over the wound. This allowed us to dress the wound occasionally. August 21, we removed the plaster and by fall he was able to husk corn in the field. In less than a year it was impossible to detect a limp in his gait when walking.

Dr. W. B. Mead, of Oberlin, Kas., read the following paper on "Fractures from the Standpoint of a Country Physican."

While my subject is "Fractures," I prefer that my remarks shall partake of a disquisition or plea for the preservation of the country surgeon, rather than undertake to advance anything new in the technique and surgical procedure of the treatment of fractures.

In the development of the civilization of nations and peoples, surgery precedes internal medicine. The earliest records which relate to surgical operations came from Egypt. There was nothing of surgical interest in Greek literature between the time of Homer and Hippocrates; but from Hippocrates to Hunter and from Hunter to Senn, the advancement of surgery has been going on. But the progress of the nineteenth century surpasses

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the two thousand years preceding, for in this century occurred the discovery of anesthetics, the establishment of aseptic and antiseptic surgery upon the scientific foundation of the new science of bacteriology. The numerous hospitals that have been built, the dissecting room and laboratory, the X-ray, miscroscope, thermometer and ophthalmoscope, have given an impetus to modern surgery. The country physican has at no time in his history had so great an opportunity to perfect himself in the surgery of fractures, at least, as he has today.

The graduates of the Transylvania university, of Lexington, Kentucky, the first university erected west of the Alleghany mountains, and of which my father had the honor of being a graduate, as were most of the old fashioned doctors of the southwest, armed with Ferguson and Cooper, did surgery as a duty, and their results were fully up to the light they had. I have been pained to observe in this day, neighbor physicians treating fractured femurs with plaster dressings and no weight, with consequent shortening as the result.

The hospital is well enough for the city physician, but it ought not to be the burial place of the ambition and aspirations of the country doctor. Certainly a four years course will render better qualified the physician whose abilities in the line of surgery are not blighted by the shadow of the hospital. Again, if the country doctor surrenders what surgery he is competent to do, he becomes unscientific and must practice medicine by circular, or go into politics for recreation and emolument.

In my twenty years experience in the short grass country, my greatest triumphs are to observe smiling patients, walking without hesitancy, who had suffered compound, comminuted fractures of the leg, for by rigid asepsis and daily observation I had been enabled to save their extremities that years ago would have suffered amputation.

We want to keep alive the self-confident, self-assured country surgeon. Instruments are in price within the reach of every physician, he can disinfect the hovel if need be; literature is ample and cheap, and he can return to his alma mater and brush the cobwebs of disuse from his brain.

When we think of our fathers making and prescribing their loathsome compounds under guidance of Eberly's practice, one might suppose, by a council of ghouls, we can hardly appreciate how easy the chemist has made the practice of medicine for us.

The day for the ignorant bone-setter is past. The surgeon to-

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day must be a scholar and a genius, because much is by right expected of him. Surgery now-a-days means "to save," instead of "to destroy."

In the country the surgery is meagre, and we should devote all the time necessary to rehabilitate our patient. I have treated fractured femurs, twenty miles distant from town, with perfect success.

There is no reason why the country surgeon should not be accurate in his diagnosis and treatment. A fracture is a solution in the continuity of a bone or cartilage, produced by violence. A fracture may be partial or complete; transverse, oblique or longitudinal; single, double or multiple; simple, compound or complicated. Symptoms of fracture are loss of function, absence of normal contour and crepitus.

In case of a fracture in the country, the messenger makes great haste for the doctor, like David Harum, when his wife collapsed, in his race for the doctor he says, "I done the heat of my life," and usually the swelling is not so great as to prevent an accurate diagnosis. The surgeon must at all times be ready for every emergency. The diagnosis is not attended with difficulty, provided displacement, mobility and crepitus are present. For the lower extremities, plaster of paris is the splint par excellence. For the arm and forearm, where the vessels are superficial, plaster of paris is not well adapted. The retention of the fragments in apposition is the object desired. Redressings are necessary to observe the parts, and see that the patient does not suffer from tight bandages. The old doctor with his long Liston splints and good results, we ought to be successful with plaster of paris, so much easier of adjustment and retention.

In 1897, I was called fifteen miles south of town to treat a fracture of the upper third of the left femur in a boy six years of age, caused by a wagon running over the thigh. I applied a temporary dressing of wooden splints on the third day, and before the date of my return visit, a messenger came and said the bandages were loose, and, they thought, the fracture displaced. Upon my return, I placed my patient on a cot, a neighbor administering the anesthetic under my direction. I replaced the bone in perfect apposition and applied a plaster of paris splint to the injured leg, with a change of weight from two and one half to three and one half pounds. I also applied absorbent cotton and two layers of plaster paris bandages to the well limb, as I thought the failure of the temporary splints was due in part to

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the freedom of the uninjured leg. I ordered a night watch for him, and the result was perfect, there being no shortening.

Last August a lady approaching our city was thrown from a vehicle, suffering a compound, comminuted fracture of the leg just above the malleoli. I kept her in town sixty days. I first applied a plaster of paris bandage, with a fenestra through which to observe the wound. On the third day, as the splint became saturated with blood, I applied wood splints with a fenestra through which I cleansed and observed the wound twice a day for two months, preventing infection. A small part of the tibia that was denuded of periosteum exfoliated, and now after nine months she can put her foot to the floor. With the exception of an attack of erysipelas, the improvement has been uninterrupted and in time the incomplete anchylosis will be removed and she will be able to use her leg. In the olden times, this leg would have suffered amputation.

I visited a case last December where a man had suffered a compound fractnre of the middle third of the leg, which had been adjusted by another physician. After seven days I found him in much pain and even suffering from shock, the physician forgetting there was a man attached to the leg, who needed sustaining in this trying hour. I remained four days with the patient until he rallied.

I cannot in this paper be specific as to the treatment of special fractures, only giving my experience in general practice.

As to splints, the surgeon must be governed by the individual case. Patent splints should be excluded, for it is absurd to think of different limbs being moulded in the one procrustean bed; here is where the genius of the individual surgeon comes in, in his adaption of the splint to the perfect adjustment and retention of the fracture to be treated.

In complicated fractures or fracture dislocations, where thorough irrigation and drainage are necessary, require especial care and treatment, as well as those cases of non-union due either to local or constitutional causes, where wiring of the bones becomes essential to a complete union.

I have not, in my country practice, observed the rules of the hospital as to the application of temporary and permanent dressings; for often in the country it is proper and convenient to apply the permanent splint at the first dressing, being careful to envelop the extremity well in absorbent cotton before applying the plaster of paris and the danger from gangrene following compression is reduced to the minimum.

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The first thing after perfect coaptation of the displaced bones, is to apply surgeons' plaster over the immediate seat of fracture; its retaining power is underestimated.

In all crushing injuries the immediate application of plaster of paris over absorbent cotton, carefully watched, restores the circulation and saves the parts from amputation; for if the injury is to the extremities, they have a very abundant supply of blood vessels, which travel and radiate throughout every muscular fiber, and which form such a network over the fingers and toes that, unless the member is lacerated around its entire circumference, we may hope that sufficient vitality remains to preserve a healthy regenerative action.

For sprains, the constant application of hot water for twelve hours, followed by the application of splints, completes the cure.

The old plan of lotions or liniments for sprains is obsolete, and even the hot water dressings may be dispensed with as a primary dressing, applying the splints at once and putting the injured parts at rest.

In the treatment of fractures, never forget the patient.

To the well-to-do, the hospital, however remote, may offer you competition, for the friends may urge the patient's removal to the hospital, though you may feel competent to render all necessary treatment.

Heat and heart stimulants will relieve the shock, while careful vigil and tact will assure your patient that he is in safe hands.

There is no reason in this enlightened age why the country surgeon should not, in cases of fracture, furnish the requisite and ordinary skill for the successful treatment of these cases.

Fractures are the special domain of the country doctor and must ever remain so, and while he might pause at an ovary or an appendix, he ought not to fail in the treatment of a fracture.

It is nominated in his diploma as explicitly as were the contentions of Shylock in his bond, that he is a surgeon, and we dislike to note his decadence.

The surgeon who fails, is as open to attack as the Westminster Confession of Faith is now to assault, although what is, ordained and inscrutable, and what will be decreed.

As to whether he fails or succeeds, depends on the man; the texture of his convolutions, his education, his perception and judgment. Here he is chief of the staff. He ought to be proud of his noble calling, and, as Milton says: "To scorn delight and live laborious days," to maintain his reputation.

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DISCUSSION OF DRS. BOYLE'S AND MEAD'S PAPERS.

Dr. Latta: I want to make a few remarks in relation to the paper which was read before dinner. Fractures are the special providence of the country practitioner, and I know from experience and observation that they are also the special bugbear of the country practitioner, and get him into trouble more frequently than anything else he is called upon to deal with. There are only two points I wish to discuss: The propriety of applying plaster dressing at the first dressing, and the form of dressing to be used in fracture of the thigh. I have never felt like applying a plaster dressing alone in fractures of the thigh, though it seems to me there is no large risk, especially if the fracture is pretty well up on the thigh. I have used the Bavarian splint in fractures of the thigh where it was not necessary to carry the splint up on the pelvis and it has always done good work. You can apply it at the first dressing. Now, in regard to the shortening of the femur: I feel very dubious about any surgeon treating any considerable number of fractures of the femur without shortening. I have had a number of cases but I am not sure that I ever had a case of fracture of the femur in which I could entirely prevent shortening. I have had one or two cases in which the shortening was perhaps doubtful; I think I never had a case where the shortening exceeded an inch, but I think a shortening of anything under an inch would be good work, and I would not promise the patient anything better.

Dr. Boyle: I have but little to say in addition to what I said in the paper. As to the application of plaster as a primary dressing, I said in the paper that I was afraid to apply it. I know a number of my own confreres who have applied it and with good success. In November, some years ago, I was called upon to amputate a leg which had been dressed with plaster on the 4th of July; the physician who applied it told me he had little or no swelling. When we removed the plaster, we found the foot in a gangrenous condition. I think it was largely the result of applying that primary plaster dressing and as I said, I am afraid to apply it primarily. The Doctor has characterized fractures as the special bugbear of the country practitioner; I have found them so, and it seems to me that I had more than my share, and while, in the majority of cases, I have had splendid success, yet I have had these unpleasant experiences which I mentioned in the paper. It regard to shortening, I always have

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a little shortening in fractures of the femur, but I hedge by telling the patient that if he gets off with anything less than an inch of shortening, he will have a mighty good leg.

Dr. Mead: I said that I had applied permanent dressings first, instead of applying temporary dressings, and so I have with perfect success in every instance. I do not advocate it as the better plan but sometimes, taking into consideration the distance from the patient, the nature of the fracture, and the circumstances surrounding the patient, you can apply permanent dressings in the first instance without fear. Of course I like the other plan because I believe our success in treating fractures lies largely in our ability to watch the patient every day. We need not fail of successful results in the fractures of the femur. As I said, I have had perfect results, no shortening; if the parts are perfectly coaptated, if the patient has a good constitution, and the union is osseous, there is no need of shortening.

Dr. L. Reynolds, Horton, Kas., read the following paper on "How Much of the Specialties May the General Practitioner Do."

Specialists have so encroached on the work of the general practitioner for some time that some defense seems necessary. Every department of medicine is necessarily full of responsibility, and he who endeavors to escape easily can never gain a desirable practice. If you argue that to do general practice so limits one's time that he cannot qualify himself, I answer that it is always the busiest practitioner who does most of the specialties. Don't understand me to advocate efforts to do practice for which one is wholly unfitted, but I do insist that the family physician can and ought to be well qualified to do a great deal of work which has formerly been left to the specialist.

We, as general practitioners, are expected to be able to diagnose special conditions, and our special friends will insist on this, apparently unmindful of the fact that diagnosis is frequently more difficult than treatment.

It must be very tiresome to a patient who is the subject of various pathological conditions to be handed around from one physician to another, passing through the hands of several, when one of them might have rendered all and more efficient service owing to a more harmonious effort.

Such policy may be good in medical centers, but it is hard on

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the subject. Imagine a patient with a not uncommon variety of abnormal conditions, going to Dr. A for indigestion. He is referred to Dr. B to have his refraction corrected. He is next handed over to Dr. C for removal of tonsils, nasal spurs, or other growths. If hemorrhoids, or rectal ulcers should be found among his morbid conditions, Dr. D is asked to cure these, and if the patient be a female the circuit is completed in the hands of Dr. E, who does a curettment or other minor procedure.

Such cases often have a real existence, and how much better that one intelligent physician take and keep charge, doing all that can and ought to be done.

The effort to study all the departments of medicine so diversifies our reading and observation that more may be accomplished than when all effort is confined to one channel.

The tendency in the populous medical centers to minutely subdivide the practice into specialties, may be an advantage both to the patient and practitioner in these localities, but this is not true of us and our patrons in comparatively rural districts. It is rather our duty to know and to do some of all the specialties than to perform the function of assorters and distributors of cases. However, it is the emphatic duty of all unqualified to refer important and difficult cases.

No one should claim that lack of time, but rather idleness, so limits our capabilities as to render us unfit to do a great deal of work ordinarily done by the specialist. One bad habit so wasteful of our time and destruction of our interest is that commonly called loafing. If we do not voluntarily waste time at the drug-store or elsewhere, some well meaning but thoughtless friends may consume our time at the office. This should be avoided in some way, and one avoidable way is to make short but maybe otherwise unnecessary excursions from the office, thus getting rid of the time killer. Have frequently found it necessary to resort to this method of economizing time.

The best material out of which to make a specialist, is the general practitioner, but since but few of us can limit our work to one department of medicine we ought to make the most of every department. There is such an interdependence or relation of one part of the body with every other that general experience is necessary to the best judgment. As the truths of medicine are discovered, its study may be more readily accomplished. We are given shorter cuts to correct conclusions, having to spend less on misinformation which must subsequently be unlearned. Post

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graduate instruction should be taken and society attendance practiced until such knowledge is acquired. This course will pay as a matter of financial investment. Because of the delicate mechanism and fine functions of the eye, this department of our work is deserving of greater distinction and separation than any other as a specialty. However, the eye specialist cannot reflect on the general physician if the latter do refractive work which has so long and so largely been done by ignorant laymen. We certainly cannot do worse than these in the fitting of glasses, besides this field of work legitimately belongs to the profession. It should no longer be left to the jeweler or traveling vender without an effort on our part to do the work.

At least one physician in every municipality should correct errors of accommodation and refraction. Errors of accommodation are the easier to correct, and is the part that is pretty generally done by laymen.

Habit and precedent are strong things and most of us have a set precedent by our habit of neglecting the specialties.

A little extra effort will be required in beginning a new work, but all such extra efforts will be fruitful sources of knowledge and income.

There is an extensive amount of work and revenue which should be utilized by the family physician in diseases of nose, throat and ear. There is such a relation existing in diseases of these parts that all should be studied together. The great principles underlying the production of these morbid conditions of the nose and throat are drainage and ventilation. Preservation of normal drainage and ventilation is the great aim of treatment.

Improper or obstructed drainage produces stasis, decomposition and sepsis which are apt to result in complications. All enlarged and diseased tonsils should be removed. I know of no exception to this rule other than tubercular or malignant diseases and excision may be best in these. Recurrent quinsy may be thus permanently cured. Ear diseases which grow out of septic conditions of the throat are frequently prevented by timely removal of the tonsils. The crypts of enlarged tonsils are germ incubators and storehouses. The common remark of doctor and layman that "catarrh is incurable" is about to pass away, for the multiplicity of conditions commonly called catarrh are nearly all curable, fully as much so I think, as diseases of the rectum and by similar methods—that is to say, by surgical treatment.

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Nearly all such diseases are mechanical and if cured must be treated mechanically. A good general knowledge of rectal diseases is readily obtained and profitable. We ought not to allow modesty to interfere with proper examination of this part of anatomy in either sex, when symptoms point to disease of the part. We all know how essential it is to be well posted on genito-urinary diseases, for no community is free from occasional outbreaks of contagious diseases of these organs. Such diseases are frequently treated very unskilfully, the evil effects of which may be very remote and varied, requiring an expert to unravel and remove the sequelæ.

According to my observation, the specialties in which the general practitioner is most deficient are those of neurology and dermatology. A knowledge of nervous diseases is of great advantage for diagnostic purposes although but little practice comes to the family physician from this source. A good deal of this work is of such a nature as to require isolation and restraint, conditions which cannot well be met in general practice.

Diseases of the skin, except the most common and simple, require a great deal of study with close observation, and, at best, are a small source of revenue to most physicians.

Thus, it is seen that conditions combine to make these specialties weak points with the rank and file of the profession.

Gynecology is the great specialty and numbers far more members than any other. It is but fair to say that a large percentage claiming equipment for this field are without special knowledge. But little work in this line is ordinarily done by the practitioner until after middle life owing to the general impression among laymen that age and time only bring familiarity with female pathology. This should not discourage effort among the younger members of the profession for the tide, especially in the more rural districts, seems to be turning in their favor. To these I wish to say: "Study pathology first, last, and all the time, with therapeutics incidentally."

DISCUSSION.

Dr. Dannaker: I could not understand the reader perfectly, but I caught the generic drift of the paper. He thinks we are drifting too much into special lines, and that the all-round practitioner is becoming a scarcity. This is absolutely true. The medical profession has recognized the fact that the field of medicine is so large that very few practitioners have the educa-

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tion and the technique to carry through all the cases which come to them to a successful conclusion without calling in a man who has educated himself in one practical line. As a teacher, I discourage young men from taking up a specialty. They must have a broad foundation to build on; they have got to come into contact with all kinds of cases in order to round out themselves and then they are competent, after a certain experience and observation, to take up a specialty with a fair hope of succeeding in it. The reason why many men fail to succeed in the practice of medicine is, that they are not thorough diagnosticians; they are not men of detail; they do not look deeply enough into subjective and objective symptoms to interpret them properly. That is the reason why criticism of this kind crop out at medical societies. It is right. The general practitioner, the all-around practitioner, must know something of all specialties; he is a fool to let every case slip through his hands. But he must treat himself honestly; he must treat his patient honestly, by going and consulting a better authority than he is, where he is not competent to do the work himself, to the end that his patient may not succumb to the disease or be deformed for life from the want of better treatment than he is able to afford. The skilful diagnostician, the all-round practitioner, is the physician that the profession admires; the man who can go to the bedside and interpet the symptoms logically, and impress the patient and friends with the conviction that he knows what he is talking about; if he cannot do that, he is a failure. Gentlemen, what I have said to you, I believe, and I believe that you endorse what I say, that every practitioner should know something about the specialties. Let him be a reader, a student; let him buy instruments; let him be an analyst; then he is head and shoulders above his competitors who are not, and his success in the practice of medicine is certain.

Dr. May: I did not hear all the paper, but what I heard pleased me very much. I think the general practitioner is getting to be more of a specialist every year. I find men in all parts of the country in the general practice of medicine who are well posted—as well as it is possible for them to be on all lines of medical practice. We talk about specialism running riot; it has been running riot, of course, but we find that the general practitioner of today is taking in the whole field; he is a student, and must necessarily be if he takes in the whole field.

Dr. Boyle: I concur heartily in the views which the Doctor has

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set out in his paper. I kuow that as a general practitioner I have to study these things. I don't want to be compelled to say to a man who comes to me with a sore eye, "You will have to go to Kansas City or Topeka and consult a specialist." I want to do the work myself; but at the same time, when the proper case does arise, I am willing to say to the patient that he should go to some doctor who has qualified himself by special study and preparation to treat that class of cases. For a number of years after I began the practice of medicine I did not like to say that, but I do not hesitate to say so now. I think it only fair to the patient and to myself to do so.

Dr. Punton: The paper interested me, but I hardly agree with the Doctor in his views. I believe there never was a time in the practice of medicine when the general practitioner was a more perfectly rounded up physician than he is today. I am inclined to think that our friends in the country are a little bit too sensitive about their own ability to do certain things. Some of the best and brightest men in our profession practice in the country, and some of the most astute diagnoses come from the country. I always regard with a great deal of pride, the country practitioner who comes to me with a well-rounded diagnosis. As a matter of fact, the most dangerous men we have in the profession today are the men who undertake to treat the things that they don't thoroughly understand. They are the most dangerous men. We all know that there are such men in the profession. Now, as a matter of fact, I think, as I said this morning, that the great necessity in this day and age is to deal honestly with our patients. What the people look for and want is results. Now, if you undertake to treat a thing you don't understand, you cannot expect to get results. I think the tendency of modern thought and endeavor in the profession is to become more and more educated in all lines of medicine. I think our schools recognize this fact; hence they are constantly increasing the curricula of studies, as well as the time needful to secure degrees in medicine, and we are turning out of our colleges today better men, men better equipped in all departments of medicine, than ever before. These young men drift to the country towns, and they are going to be heard from in the future; they are going to rub up against the old practitioners who, by reason of old age, lack of enterprise, and more or less intellectual laziness, have really become back numbers in the community where they live. The young men are going to displace them and come to the front.

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I think the practice of medicine was never in a better light before the people than it is right now.

Dr. Schenck: I don't know what extent of population is required to take up a practitioner and set him out of the category of the "country doctor;" how far he must be removed from the centers of population and civilization. But this is true, that the further he is removed, the more he is thrown upon his own resources, the better he will develop. The man who knows that he must rely upon himself, who, as suggested this morning, improvises surgical instruments when he cannot buy or borrow them, becomes a developed man. He learns to adapt himself to needs. When he has qualified himself to practice in all departments of medicine, whatever may be the size of the town in which he practices, he has become, in fact, a specialist. He wants to know it all, so to speak. "The eye cannot say to the head, I have no need of thee." We are all parts of one great whole. We must understand that great whole before we can devote ourselves successfully to the treatment of a part. So I say to the general practitioner—the country practitioner, if you please—do not lean to largely upon the specialist, but make yourself fully acquainted with all departments of medicine, that you may be in deed and in truth, a physician worthy of the name.

Dr. F. E. Schenck, of Burlingame, Kas., read the following paper on "Means of Relief in Diphtheritic Stenosis of the Respiratory Tract."

Diphtheria is one of the most dreaded, one of the most fatal, and unfortunately rather frequent diseases of childhood.

The records of its doings antedate the Christian era, and some epidemics of the middle ages are sufficient to appal the stoutest hearts, and even some of the more modern have been very fatal.

The usual location of the disease is on the pharnyx and tonsils, and as it traverses from this location it becomes much more unmanageable and consequently much more fatal. In the posterior nerves the membrane forms very abundantly, and on account of the limited space the membrane is very firm in this locality, the drainage very imperfect where the nostril is completely filled with the membrane; hence the great danger of sepsis from which so many die when the nerves become greatly involved. If the membrane takes a downward course the danger of sepsis is not so great but the danger of stenosis is very great and very fatal.

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The larynx being proportionately much smaller than in the adult, a moderate amount of exudate soon becomes a matter of great moment to the child, especially if the accompanying muscular spasm be severe.

W. P. Northrup, of New York City, says progressive unremitting laryngeal stenosis is characteristic of the invasion of the larynx. He further declares diphtheria of the larynx, with its complications and sequelæ, is the most fatal disease to which childhood is exposed, and my limited experience certainly corresponds with the above statement, for I have seen but few recoveries from this condition either in my own experience or in that of others.

This being the case we should hail with joy anything which will relieve these unfortunate sufferers, even though it does not save them from an untimely grave.

With this thought in view we will now report a new way of applying an old remedy, which for a time at least had the desired effect, and under more favorable circumstances might accomplish all that could be desired.

It can best be described by giving a brief history of the case. Was called to see Rolla N., male, aged 13, well developed. Found him sitting by the fire in an armchair and fairly comfortable. The one thing which had alarmed the parents was the hoarseness from which he was suffering. Upon examination respiration was slightly increased in number, a little labored; temperature normal; cough mild; although croupy, his general condition otherwise normal. Examination of the throat showed the tonsils and pharynx red and congested, but no membrane or even a suspicious pedicle in sight.

Further inquiry elicited the fact that a mild sore throat had been prevailing in the school, accordingly a diagnosis of diphtheritic laryngitis was made, and the family informed of its grave nature. The usual remedies prescribed, I returned home asking to be informed in case of any change. About eight o'clock in the evening a messenger arrived stating that the boy was worse, and requested my presence as soon as I could go. Preparing to do a tracheotomy I returned, but found the spasmodic action had greatly subsided, so there was no call for immediate action, but remained with him the balance of the night. In the morning Dr. Seabrook was called in when we decided to try antitoxin; being thirteen miles from town, it was five o'clock in the evening before we received it, when seven hundred units were at

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once injected and seven hundred more in twelve hours. Dr. Seabrook kindly volunteered to remain with the case. During the night respiration became so much obstructed that he performed tracheotomy, which at once relieved him and he soon fell asleep and rested nicely for the next twenty-four hours, but at the end of that time it became painfully evident that tracheal stenosis was taking place.

Sitting by the bedside, the second night after the tracheotomy and watching the boy's manly struggle, like many other physicians feeling great responsibilities resting on them, have bethought themselves of means and devices which would not have occurred otherwise.

On the chair beside the cot stood a bottle of peroxide, in my case a soft catheter, this was taken and dipped in the peroxide and passed through the tracheotomy tube down beyond the membrane. This was repeated at intervals of five to ten minutes for about two hours, when he was so far relieved that he fell into a quiet easy sleep of several hours duration. He now awoke and in a few moments began coughing, when a large piece of membrane broke loose and completely obstructed the tube, the inner tube was now quickly removed, when a second one filled the tube and was removed, and the third likewise.

The breathing was now entirely unobstructed and the outlook for recovery much improved; but alas, our hopes were only temporary, for in twenty-four hours it became evident that the membrane was now forming in the bronchi and beyond our reach: the same device was again tried and the catheter passed down until it completely blocked the bronchus, yet of no avail, for the stenosis continued to increase until death closed the scene.

In our experience we have never beheld a condition more remorselessly cruel, and no spectacle more piteous to behold than that which followed this bronchial stenosis.

In those conditions in which the membrane does not extend beyond the primary bronchiti can be controlled by this means very readily and in cases less persistent than mine, life may be saved.

Summing up the course of treatment in a similar case we would say, antitoxine in full dose and repeat in twelve hours. Stenosis continuing, intubation; if this does not relieve, or evidence of membrane extending into trachea, then tracheotomy and the local application of peroxide as above indicated, or by any other device which will not introduce too much of the remedy at once. General treatment carried out, and special indications met as they arise.

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DISCUSSION.

Dr. Hughes: I rise simply to speak about the good results of intubation. I have intubated from 100 to 150 times for membraneous croup, diphtheria and stenosis of the larynx, with a mortality of about 48 per cent. I think the operation of intubation should be encouraged and brought to the attention of the general practitioner whenever possible.

Dr. Boyle: I don't know how it has been with others, but I have had a wonderfully disagreeable experience in the treatment of this disease. I have had so many cases die, even with tracheotomy, that I have begun to tell people when they come to me that I wish they would get somebody else, because the patients die any way. Since I have been using the antitoxins I have never had a case which took the course described by the doctor, but I am glad to hear of this case for the instruction which it affords us.

Dr. Howard: I have not had much experience with diphtheria, but in a few cases which I have treated I used the antotoxin with good results. It occurs to me that in the case mentioned, the first injection was not sufficiently large. I believe in larger injections. I have been accustomed to using 1000 to 1500 units at the first injection, and I think the results better from that quantity than from 700 units.

Dr. Dannaker: I am a victim myself of diphtheria; I have lost the hearing in my right ear in consequence of this dread disease. It came of my trying to perforate a membrane in a child's throat and I succeeded in doing so with the result that the child vomited into my face. Within forty-eight hours after that when I stood up before a mirror I could not see my soft palate or tonsils. It was in the days before antitoxin, and I was choking to death. What did I do? I took a swab, dipped it into pure tincture of iron and put it down my throat. I breathed easier but I thought I was dying, and fell over on the bed completely exhausted. It was a year before I had got any nerve at all about me. Doctors, don't talk to me about diphtheria! It is one of the most serious diseases you can come in contact with. I never look at a suspicious throat without taking a towel and putting it around my face. If you do nothing more to protect yourself, tie a towel around your face; it may save you years of sickness and suffering. Now, about the antotoxin, I have had success and I have had

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failures. Gentlemen, there is one thing I want to bring before you; it is an old remedy, but I have seen it work wonders. It beats strychnine. Spirits of camphor, given hypodermically—the full contents of the syringe forced beneath the skin will absolutely surprise you by its stimulating effect. The lips become pink; the pulse increases in volume; deep full respirations ensue. Then you can slip in your strychnine, and your antitoxins, but bridge them over with spirits of camphor. I am not telling you any hocuspocus, but what is true. Just put that away in your brain cells, and in the first case of shock coming on, just you give a hypodermic of spirits of camphor. But to return to the membrane, the choking, the struggling case: Use your peroxid; one-half of one per cent. of formalin, not stronger than that. That is half a dram to the pint in a crude way. Support your patient with whisky; give whisky, strychnine, and spirits of camphor, and you have done all you can.

Dr. Mead: I have had but little experience in the use of antitoxin. In one family, I had eight cases of diphtheria. Seven of them seemed to be tonsilar; one of them became laryngeal. I used the antitoxin but it didn't do any good; I lost my patient. Speaking of camphor: I am satisfied that an injection of listerine or carbolic acid will do just as well as antitoxin. Now, understand, I am not looking backward. I am looking forward. I am in hopes that antitoxin will do what is claimed for it, but I sometimes question if it is not the antiseptic properties of the antitoxin that possesses the medicinal virtue. The country surgeon can perform tracheotomy, but he cannot perform intubation.

Dr. W. L. Schenck: While I would not tie to any formula in diphtheritic cases, one that I used to find most desirable was 1-100 of a grain of strychnine, one grain of quinia, 5 grains of sulpho-carbolate of soda, and 10 grains of sulphur dissolved in a dram of glycerine. It is an antiseptic tonic, and attaches itself to the part.

Dr. F. E. Schenck: One word in regard to the antitoxin. In the case reported, the physician across the hall said the dose was too small. That was my first case with the antitoxin. In a case which I saw last fall—a child eight years old—the tonsils were clear of the disease, but the hoarseness and all the indications of laryngeal diphtheria came on. Another physician who had seen the case before I was called in told the family that it was simply a bad cold. He left and said he would not return any more.

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After 24 hours the family became alarmed and sent for me. I told them what the trouble was; it was laryngeal stenosis, and the great probabilities were that it would be fatal, at least, it would have to be tracheotomized. I at once telegraphed for antitoxin and injected 800 units at once, and 700 more in twelve hours, and in twelve hours from that time the membrane commenced to break loose and the child threw it up. But my judgment now is, as the gentleman suggested, that the first dose was too small; that larger doses should have been employed.

Dr. B. D. Eastman, Topeka, read the following paper on "The Pharmacopœia Versus Proprietary Preparations."

I remember to have found somewhere in my reading a saying bidding one "beware of the man of one book." This expression is not to be taken too literally. It is simply a figure to indicate the coign of vantage held by him who has thoroughly mastered some one author, study or department.

The physician who has a thorough knowledge of the remedies which are contained in the Pharmacopœia, holds a vantage over him who, but imperfectly acquainted with the official drugs and preparations, is easily led away after the too many false gods of the shrewd manufacturing pharmacist.

To me, it seems that the Pharmacopœia would be stronger if it contained less; that is, if redundant drugs and unnecessary preparations of desirable ones were left out. Such lessening of the number of drugs and preparations would invite the student and practitioner to become more thoroughly familiar with what remained, and such thorough familiarity would enable the physician to extemporize combinations better adapted to a great many cases as they arise than the hand-me-downs of the manufacturers. On the other hand new and desirable drugs and preparations should be admitted as often as every ten years by supplemental publications.

We are living under circumstances which beget mental dissipation. We skim the morning and the evening dailies, including the 48 page omnium gatherium yclept the Sunday Edition, we glance at several weekly illustrated papers and a dozen monthlies, and keep running till late at night a skimming station for the books, to the making of which there is no end, and after all the mind is not well stored.

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Similar conditions obtain regarding medical publications, their name is legion, and their great number leads to superficiality. In addition, the manufacturing pharmacists conspire to produce a similar flood of "literature" regarding newly discovered drugs and proprietary combinations. Almost every week there comes to our tables a new coal-tar product, with a flux of literature claiming it to be the one perfect antiseptic.

Hayden's Viburnum, Dioviburnum, Utero-Tonic, Helonious Coup, Elixir Uterine Sedative Specific, Uterine Regulator, Uterine Tonic, Viburnum Compound, Female Cordial, Black Haw Sedative, etc., etc., rapidly succeed each other, the promoters of each announcing, "The king is dead—long live the king."

A single manufacturer offers some 200 unofficial cathartic preparations, and if all the preparations of the different manufacturers be counted, the number will be paralyzing.

Now, I am far from claiming that these proprietary articles have no merit. Many of them are very meritorious; they have come to stay, and we must meet the situation. The most threatening danger is that the almost countless array of proprietary preparations will overwhelm the unwary practitioner as the tides in the bay of Fundy engulf the heedless boatman. If the physician follows all the new leads, he will lose individuality and befog his knowledge. If he ignores them altogether he will miss some good things. In this dilemma what is the best course to pursue?

It seems to me the best way to meet this problem is: First, to increase and emphasize our knowledge of and familiarity with the official remedies and preparations. To this end the medical student should be well drilled in a knowledge of the Pharmacopœia, under some good classification, for classification is a great aid it grasping and retaining knowledge on any subject. He should also be thoroughly instructed in the fundamental principles upon which therapeutics rests, and when he graduates he will be enabled to select remedies with appreciative discretion.

The young physician who has had thorough drilling in these two correlated studies, dynamic effect of official drugs and therapeutic indications, will be prepared to meet most of the requirements of practice from the Pharmacopœia. Let the older practitioner revive his materia medica by the light of one of our best modern authors and keep in close touch with the Pharmacopœia and he will become more and more attached to and successful

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with official remedies. In short, let us all keep the official remedies to the front.

But what, you ask, is to be done with the proprietary articles? What rule shall guide in regard to their use?

The answer is simple. Apply to proprietary articles the same principles and rules which govern the use of official drugs and prepararions epitomized as follows:

First—Use no secret remedy.

Second—Use no combination because it is lauded as a panacea.

Third—Take the claims of manufacturers and promoters with many grains of allowance. If any proprietary drug or combination comes to your knowledge which you deem worthy of consideration, study it as carefully and as thoroughly as if it were official, and, if found worthy, hold it in your memory or memorandum for use under the same rules.

Fourth—When you have made a diagnosis and determined what therapeutical action is required, select the most appropriate remedy of which you have real knowledge, as gained and held under the foregoing suggestions and rules, and subject also to the limitations which have been specified.

And lastly, always give the Pharmacopœia the preference.

Dr. W. F. Sawhill, Concordia, Kas., read the following paper on "What Should the Physician Prescribe? Should he Prescribe Proprietary Remedies?"

It is not the expectation of the writer of this paper that it will be one of a scientific nature, nor will it take more than a few minutes of the Society's valuable time. As men have seen fit to write books on the "Theory and Practice of Medicine," it is a proper thing to say something on the practice alone. Theory is right and necessary but the practice is what gives relief to the sick, and that is the business of the physician. I say relief because the man that cherishes a theory that he has a "specific" in medicine can never demonstrate it in practice.

Our modern scientific medical colleges of today teach the theory better than it has ever been taught, and also give the student some idea of practice, but it is only when he has to fight disease alone that he learns to develop his individuality if he has any. Shall he develop his ability and become a student, not only of disease and its symptoms, but the action of drugs for the relief of the same; or will he become a mere machine to pour down

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men's throats all manner of combinations of drugs already prepared for him. The student of materia medica learns the action of drugs chemically and physiologically; he learns what are synergists, what antagonize, and what are incompatible, and if he be a careful observer he will learn in practice the action of drugs in relieving the patient; he will learn by experience and not be wholly dependent on other observers. The most successful physicians of today are inclined more than ever to the idea of one drug at a time or rather at a dose. There may be symptoms to relieve that would require special treatment, but the idea of the principal treatment is best carried out by few drugs in combination. A physician has no right to administer any drugs or combination of drugs that he does not understand the physiological action of. Consequently no power is given him ethically, morally or in any other manner to prescribe a proprietary remedy of which he has no knowledge concerning the ingredients. A physician should not hesitate a minute to exclude such remedies from his list. He should not only know the contents but the amount of each ingredient to the prescribed dose. Should he, however, prescribe the remedies that do publish the formulæ, I offer no objection to any definite chemical products notwithstanding the jaw-breaking names of some of them.

There was a time when the doctor dug many of his drugs from the earth himself. I can remember some, and successful practitioners they were too. Then came the drug stores to cater to the wishes of the doctor; but within a few years, if the doctor has not been exceedingly careful, he has ended up by finding himself catering to the wishes of the druggists, especially to the manufacturing druggists. Is it not ruination to the physician to let himself get into the habit of prescribing medicines that are already compounded? Does every patient that has bronchitis, or irritability of the bladder, or constipation, require the same remedy? Is it not the physician's duty to study each patient individually? And when he writes a prescription consider the effects of each drug on that particular individual? Some people would require 1-60 gr. strychnine, others 1-30 gr., to produce the desired effect, while it might be contrawise in regard to some other drug in the same person. Then, how shall we get the right quantity of one drug without getting more than is needed of some other? The answer is, to have the right quantity of each in the mixture as suited to the case. That you cannot have 15 you accept what is laid down to you by the manufacturer of pro-

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prietary remedies. Why should we prescribe them. Are they cheaper? My experience is, that they are much more expensive. Are they better compounded? Certainly our prescription druggists of today are capable of compounding any prescription the doctor may write.

I am not condemming the virtues of proprietary remedies. Many of them may do all that is claimed for them, sometimes, the same as any drug. I have tried some of them when I knew their contents, but by experience I have had no better success, in fact I think not so good, as when I studied up a drug or combination of drugs suitable to my case. They can have no preference over ordinary compounded drugs. But it is the effect on the physician, not the patient, that leads me to write this paper. We all know how easy it is to get into a rut, and how hard to get out. How easy it is for the man who is tired to take the easy road, and as he is always supplied with literature lauding the various remedies for the various diseases it is an easy matter to prescribe one. Where will this lead to? It will not be many years before he will find himself, notwithstanding his experience, fifty per cent. less capable of successful work than when he graduated from medical college.

Shrewd advertisers of quack medicines are using "catchy" names for their medicines, knowing how easily the average person is to humbug. Now, are not owners of many proprietary remedies advertised in medical journals doing the same thing? Adopting names that signify the name or location of the disease instead of the names of the drugs in the remedies.

I do not lay claim to above the average intelligence, but I think the average physician intelligent enough to have nothing to do with any remedy for which its manufacturer claims extravagant things and their name is legions. I feel some pride in our profession yet. Let us abhor any spirit of commercialism in it.

Many of our medical journals are to be commended for the stand they have taken in regard to the kind of advertising they will accept. The trustees of *The Journal of the American Medical Association* deserve much praise for ordering the publishers to print no advertisement of any remedy without the names and quantity to the dose of each ingredient be also published. I have perhaps written enough on this subject. In closing I want to again make the statement that it is not the effect on the patient but on the physician prescribing proprietary remedies that is to be deplored.

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DISCUSSION.

A member: These papers are timely. It has been a long time since I attended a session of this Society when papers on this theme were presented. We have run riot in our search for remedies for special diseases. Dr. Eastman has recognized and given us an appreciative paper on the evils of the day. I think he has not only made the diagnosis, but has given us the remedy at the same time. If the principles which he has so lucidly set forth in the paper were taken up and carried out by every member of the Society in his practice, we could do much to break up this tendency to rely too much upon proprietary drugs. As he suggests, very many of the drugs which have been put upon the market are useful. I do not think we should ignore them altogether because they are proprietary drugs; as he says, we should take them and apply to them the same principles as we do to official drugs, and if we find that they do the work, and have merit, then it is time to adopt them. I think that we, as physicians, have the right to use them, but we should also exercise great care and caution in their use. As physicians we should prove all things, and hold fast to that which is good.

Dr. Mead: Now, there is a difference in proprietary preparations. Some contain the formula on the outside. I do not know whether the formula is absolutely correct or not, but I take it that it is. Whether it is or not, we are not chemists enough to point out, but we know of what the remedy is composed, and we know that it is palatable. It is true that we are bothered to death with circulars exploiting this and that new remedy, and so long as physicians practice medicine, they will try them, and so long as they prove meritorious, they will buy them, and as long as they buy them the chemists will continue to make them. Now, again, we are not in the business of selling medicine, but it is our business when a man comes to us who is sick, to find out what is the matter with him and cure him if we can, and it is entirely immaterial with him who made the medicine. I think the chemist has made it easy for us in the practice of medicine, and their compounds are of great advantage to us and superior to the old compounds that we used to make.

Dr. Jones: I don't suppose there is half a dozen members of this Society who know that there are today laws governing the sale of medicines, proprietary and otherwise, that make it a penal offense to sell or offer for sale any drug or combination of drugs

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that are not in conformity to the laws; but the laws are rendered absolutely inoperative by the absence of any official way of establishing the purity of drugs.

Dr. Sawhill: I did not in my paper decry every one of these proprietary medicines. I said that many of them were good, but they are not better than our official remedies. I never could understand the necessity or propriety of paying a dollar for a medicine that is worth only 25 cents. My paper was more along this line: That the physician who got into the habit of prescribing certain things does not become a good practitioner in that way.

Dr. Eastman: I do not know that there is anything I have to add to my paper. One suggestion was to never use any secret preparations. That cuts out many proprietary compounds. Secondly, only to use medicines that you know about; but give the Pharmacopœia preference always.

Dr. J. E. McCarthy, of Dodge City, read the following paper on "Fractures of the Inferior Maxilla."

Mr. President and Gentlemen of the Kansas Medical Association: The subject of my paper as it appears in the regular printed program is very much broader than my paper will admit, since I describe merely one class of fractures—those most common—of the body of the inferior maxillary bone, at or near the median line.

One of the most annoying fractures with which we have to deal—the hardest to keep immobilized—is the fracture of the inferior maxilla. To add to the inconvenience of the patient and the annoyance of the surgeon, the feeding problem has to be encountered.

With the four-tailed bandage, and other splints in common use, the fragments are moved each time the patient eats, drinks or speaks. Dressings are constantly soiled by food and saliva.

The ideal splint is one which admits of at least partial use of the lower jaw. This may be accomplished by wire splints, applied externally and internally to the maxilla at the neck of the teeth. For instance, a fracture at or near the median line. For points of fixation take firm teeth on each side of fracture. Cut splints of No. 18 iron wire, ¼ inch short of distance between said teeth; bend to conform to line of teeth; flatten and drill a small hole at each end; secure respective splints in place by No. 32 iron

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wire. By twisting the wires, the fragments are mechanically drawn into close apposition; now by securely wiring the anterior to posterior splints, through each opening between the teeth, all lateral motion is rendered impossible.

The whole should be covered with parafine or oxa-phosphate zinc cement, such as dentists usually use, thus preventing accumulations, the wire ends jagging the lip or the action of fluids on the metal. The mouth should be kept aseptic by use of borated washes.

The advantages of described splint are manifest for while the patient is unable to take solid food or use the mouth to any great extent, he is perfectly comfortable; is able to talk; to keep the mouth free of saliva and to eat fluid food with ease. The operation causes the patient very little inconvenience.

Report of case—Mr. H., came in with inferior maxilla fractured in median line. I called in Dr. O. H. Simpson, our local dentist, and with his kind assistance applied the above splint. Two hours later the patient reported himself free from any inconvenience and as comfortable as before the accident. An uneventful recovery followed and I regret that the distance is so great the patient could not present himself here today to show you the perfect result.

The following paper, by H. Z. Gill, M.D., Pittsburg, Kas., on "The Importance of Carefully Diagnosticating the Systemic Cause in the Treatment of Chronic Diseases of the Eye and Ear," was read by title.

For many years it has been my custom in treating chronic diseases of the eye to carefully inquire concerning the history of the cases, and to ascertain, as far as possible, the basis or cause of the chronicity, what diathesis lay at the foundation of the continuation of the disease. If I have succeeded equally with my fellow practitioners or in many instances surpassed them, it has been on this line. While it is true that in some cases the chronic condition may depend upon local changes entirely brought about by local acute affections, yet it is beyond question that in eye diseases as in all others the obstinacy and chronicity depend upon a diathesis or a systemic condition which must receive attention before the local treatment will be effectual or permament. This question is not at all new, being treated in every important work in ophthalmology, but its importance is con-

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stantly overlooked in the general management of cases. Not seldom when the disease, especially of the ball, does not yield to a protracted treatment, the removal of the eye is proposed. Fortunately in these cases the patients are not always ready to lose the organ, until fully convinced of the absolute necessity of such a radical procedure.

Within the last few years several such cases have come under my observation in which positive assurance was given of the necessity of removing the eye, generally the reason being assigned to save the other eye, and this coming from men claiming to understand treatment of eye affections, and to treat them as a specialty. In not one of these cases has later results proved a necessity of removal, but to the contrary; and these cases have recovered with the eye retained, not an insignificent consideration for the patient.

The fault, we must confidently believe, was not thoroughly appreciating the general cause which kept up the local effect and directing treatment accordingly. It is unfortunately true that many acute cases which should be promptly relieved, become chronic from the very oversight of which we have just spoken.

The three principal constitutional affections with which we have most frequently to deal, as Mr. Jonathan Hutchison emphatically set forth some years ago, are tuberculosis (struma), rheumatism and syphilis. These are capable of manifesting their presence in various forms, and in many cases the signs may be obscure; but a careful anaylsis will in most cases reveal the hidden presence of the constitutional malady of which the local trouble is but one expression. The secret having been discovered the key to the situation is in the hand of the practitioner. But until that time the success was doubtful or accidental. Hasty conclusions from superficial examination led to erroneous conclusions and faulty recommendations

Mr. A., aged 60, left eye had been destroyed some years before. There was present conjunctions of both eyes, most likely of the contagious variety. He had been urgently advised to have the defective ball removed on positive penalty of losing the right eye from sympathetic ophthalmia. This advice had been emphasized by three or four physicians. Not being ready for the operation, and appreciating the opinion as infallible, he was advised to consult your reporter before accepting the final verdict. All this I learned sometime later. After a careful examination of the case, including the early history and the recent development, I saw no

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good reason for removal of the ball, there being no well defined symptoms of sympathetic affection. There was present the photophotra of general conjunctioitisonty.

Prompt and thorough use of disenfectant and astringent remedies secure as prompt and complete relief, temporary and permanent, as could be desired. No operation was made in the case, nor has there been since, now some years having passed. There was, however, in this case a susceptibility to rheumatism and this received the needed attention.

The second case, Mrs. B., aged 30, which brought prominently to the fore the systemic feature, and which gave supposed grounds for strong recommendations for the removal of the organ, was of neuralgic and rheumatic complication. Equally urgent were the reasons assigned for removal "to save the other eye," three or four medical men uniting in the advcie. Evidently the general condition had been overlooked and neglected. Local and general treatment gave satisfactory response, a happier surprise to the patient and a pleasure to the practitioner.

These two cases are mentioned on account of the recommended treatment based on faulty diagnosis, and an inexcusable operation as a conclusion. Ear cases have come under observation in which a careful and accurate diagnosis has directed to successful general treatment, with the aid of local measures, in which the latter alone would have failed.

The following paper by G. C. Purdue, M.D., of Wichita, on "Repairs of the Perineum," was read by title.

It is my experience that what I see I remember more distinctly than what I read, and this is true in surgical operations as well as in other things. Not being able to present to you the real pathological condition of the relaxed vaginal outlet, and the operation that I prefer for its repair, I have had these drawings made from the beautiful plates found in Kelly's splendid work on operative gynecology, and that you may be able more easily to follow me in what I have to say on this subject, I will now demonstrate as well as I can from the plates the normal position of the uterus, the muscular support, and the normal and pathological condition of the outlet.

In an editorial on plastic surgery in the August number of *The American Gynecological and Obstetrical Journal*, the writer

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says: "Surely no branch of gynecological work is so frequently indicated by the pathological condition to which women are subject as this, and with equal certainty may it be said that none has been so neglected by gynecologists, none so little understood and appreciated, and none in which experts are so few." My experience in recent gynecological work leads me to believe this statement to be correct, and especially do I find that the general practitioner frequently overlooks this pathological condition, one that is more frequently present than any other, and one the repair of which, offers better results than in any other line of gynecological work, with less risks to the patient, and more reputation to the surgeon.

In an editorial in the September number of *The American Gynecological and Obstetrical Journal,* on this same subject, the author says: "Every day new operations are proposed to meet old indications, are greedily seized upon and hopefully applied, only to be discarded for the next promising novelty offered." Tnis is a well-known condition every reader of the literature on gynecology will attest, leading one to believe that the repair of this pathological condition is still very imperfect and that the status of plastic surgery of the floor of the pelvis today is acknowledged to be unsatisfactory and tentative.

The reason, perhaps, for so many different methods of repair arises from the uncertainty existing as to the pathology. Browning in a contribution to the knowledge of the anatomy of levator ani muscles, is opposed to the generally accepted view that the levator ani is the principal support of the pelvic contents of woman, and he gives several important reasons for the statement. (1.) That in the human subject it must be considered as belonging to a rudimentary class. (2.) That from the weakness of its mode of origin and insertion its value is overestimated. (3.) That it is contrary to physiological tenets that a muscle gives continuous support. (4.) That if intact the rectovesical fascia is quite sufficient to give the necessary support. (5.) That the muscle in the male is equally as well developed as in the female.

Dr. M. L. Harris, of the Chicago Ploy clinic, believes that the fasciæ in themselves never furnished the kind of support needed in this location. He says that there is not an instance in the human body where a fascia, aponeurosis, ligament, or similar structure unaided by muscular action sustains for any great length of time any weight or tension. His conclusions drawn after a thorough study of the anatomy and physiology of the dif-

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ferent structures forming the pelvic floor or diaphragm are that the support depends absolutely upon the practically continuous activity of the intact muscles which enter into the formation, and that the fasciæ are merely adjuncts to the muscles and in themselves entirely inadequate to furnish the support required. Neither one of these writers seems to think that the perineal body has anything to do in forming any part of the support of the pelvic floor. Pozzi, in his exhaustive work on medical and surgical gynecology says: "The perineum is a resistant fibro-muscular floor which closes in the abdominal cavity below and supports the weight of the contained viscera," and in the latter part of his description of this perineal body he says, "the lateral parts of this perineal prism have for their support the deep internal borders of the levator muscles of the anus attached to the side of the rectum, and form by their intricate arrangement a support for the whole region.

These three writers represent the three leading theories of this pathological condition for the repair of which there are so many different operations, and upon which subject there has been so much written.

I cannot agree with Browning in his statement that the fasciæ furnish the entire support. Neither can I agree with Harris when he says that the support is furnished absolutely by the continuous activity of the intact muscles, but I am decidedly in favor of the conclusions reached by Pozzi which are, as near as I can understand, that the support of the floor of the pelvis is formed by the muscles and fasciæ which enter into the formation of this complex anatomy, and that the perineal body has a physiological function to perform.

That you may more fully appreciate with me what I mean by a relaxed vaginal outlet, and what muscles and fasciæ are involved, it would perhaps be better to review the gross anatomy of the pelvis and more especially the muscular supports of the female generative organs and those most important in forming the outlet. For without a knowledge of what is involved in this condition, a clear understanding of what is needed is impossible, and a perfect repair is an accident. The muscles involved are the sphincter ani, the levator ani, the transversalis, perineii, the constrictor vaginæ, the coccygeus and the pyriformis. The sphincter ani, as you can see by the plate, is a thin flat plane of muscular fibers, elliptical in shape, and is intimately adherent to the integument surrounding the margin of the anus. It arises

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from the top of the coccyx by a narrow tendinous band and from the superficial fascia in front of that bone, and is inserted into the central tendinous point of the perineum joining with the transversus perinei.

The levator ani and the accelerator urinæ ani is supplied with nerves from the anterior division of the fourth sacral and internal pudic. The levator ani, which is the most important muscle involved in this relaxed condition, is a broad thin muscle situated on each side of the pelvis. It is attached to the inner surface of the true pelvis and descending, unites with its fellow of the opposite side to form the floor of the pelvic cavity. It supports the viscera in this cavity and surrounds the various structures which pass through it. For our purpose it will be enough to say that this muscle arises from the posterior surface of the body and hamus of the os pubis on the outer side of the symphysis. The fibers pass downward to the middle line of the floor of the pelvis and are inserted, the most posterior into the sides of the apex of the coccyx, those placed more anteriorly unite with the muscles of the opposite side in a median fibrous raphe. The middle fibers which form the larger portion of the muscle are inserted into the side of the rectum blending with the fibers of the sphincter muscle. In the female the anterior fibers of the levator ani descend upon the side of the vagina. The nerve supply is from the anterior division of the fourth sacral. This muscle supports the lower end of the rectum and vagina and also the bladder during the efforts of expulsion. It elevates and inverts the lower end of the rectum after it has been protruded or everted during the expulsion of the feces. It is also a muscle of forced expiration. In fact this muscle acts as a pelvic diaphragm. The transversus perinei is a narrow muscular slip which passes more or less transversely across the back part of the perineal space and is inserted into the central line of the perineum and is supplied with nerves from the perineal branch of the internal pudic.

I will not take your time by giving the anatomy of the other small muscles, but refer you to the plates I have enlarged which show them very nicely.

Now, keeping this anatomy in your mind together with the support furnished by the vesical and anal fasciæ, remember that the levator ani muscle and its fasciæ are intimately connected with and give off fibers to the rectum and vagina as these canals pass through the pelvis floor. Recall the positions of the soft hollow viscera, rectum, vagina and bladder as they lie overlap-

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ping one another, forming a soft easy bed for the uterus and its appendages and receiving from above the intra-abdominal pressure. With the anatomical elements and mechanism of support in mind, consider for a moment the effect upon these structures of labor and the passing of the child's head. What a tremendous stretching of fibers, as the whole pelvis floor is crowded downward and the vaginal outlet is dilated by the advancing head. I believe it is reasonable to suppose that it is impossible for the tissues thus situated to ever regain their tone and recover from this injury. Although the muscles of this region are very resilient, and convalescence may be conducted properly and the patient to all appearances fully recover, yet the vaginal outlet seems to remain larger than before and the projection of the pelvis floor greater.

But suppose the tissues forming the outlet finally yield after having been stretched to their utmost, either producing laceration and separation of the fibers, or separation of the fibers alone without rupture of the perineum, the ultimate result is still greater projection of the pelvic floor and a constant tendency for the intra-abdominal pressure to force the pelvic contents through the enlarged vaginal outlet, producing prolapse of the vaginal wall, retroversion, rectocele, and cystocele, edema, congestion and inflammation.

And now, having gone over the gross anatomy of the pelvic floor, and outlined the elements that give strength, and brought before your minds some of the results of over-stretching, rupturing and subcutaneous separation of muscles and fasciæ form the pelvic floor and the vaginal outlet, I wish to note briefly the indications to be met in order to restore as nearly as possible the integrity of the parts. But before describing in detail the operation that I am accustomed to perform, I will mention some of the most important and common symptoms, not attempting to mention all, for they are numerous and in direct relation to the lesion.

Upon inspection of the patient in the dorsal position with the legs well flexed upon the abdomen, there is an unnatural flatness of the crease between the buttocks in front of the anus. The anus is wide, everted and displaced backward. Where there has been no tear the skin perineum is often preternaturally deep and the fourchette intact. I think many cases of relaxed outlet are overlooked on account of the inveterate habit of physicians estimating the functional activity and efficiency of the vaginal

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outlet by its depth on the skin surface. The over-stretching of perineum during labor often causes it to appear deeper on the skin surface than before labor.

To estimate the effects of lifting or straining on the pelvic organs in case of this kind, instruct the patient while on her back with legs flexed, to bear down. The result will be that both the anterior and exterior walls of the vagina will roll out exposing considerable portion of the lower vaginal wall and in many cases bring the cervix into plain view by a slight retraction of the posterio-vaginal wall. Upon palpation the entire wall of the vagina is found to be loose and flabby and the muscles surrounding it, and through which it passes, giving it no support at all. The cervix is often very easily exposed by placing the patient in the Simm's position, without the aid of the speculum, because the uterus is often found retroposed and in descensus. There is usually constipation, cystic irritability, headache, backache, leucorrhœa, menorrhagia and metroorrhagia, and the many neuroses which accompany this condition are but expressions of the general loss of tone and general relaxation.

In a complete consideration of this subject we would have also to deal with other causative elements of that condition of relaxation that we call subinvolution, viz, edema, congestion, and inflammation.

After having called your attention to the mechanism of support and the traumatism which it suffers during pregnancy and labor, I desire to present to you for your consideration and criticism an operation which I have adopted after having seen many of the different operations of this country. While the operation which I propose to describe does not restore perfectly the parts to their normal condition and position, yet in my experience, it comes nearer doing so than any other with which I am familiar, with perhaps the exception of the one done by Dr. Frank T. Andrews, which is very much like the one I expect to describe. The technique is not unlike other operations for the relief of this condition. After having the patient prepared for operation and in the lithotomy position, the libia are separated and the sides of the vaginal orifice are retracted with sharp hooks or forceps placed at or above the lower myrtiform carlis. These hooks or forceps when brought together mark the upper external angle of the new perineum. Then with curved scissors remove a strip of mucous membrane from the left hook or forceps to the

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right one which forms the base of the triangle to be denuded. Remove all cicatrical tissues if there has been a rupture, then pick up the cut edge of the mucous membrane, dissect gently and easily until the tip of the index finger can be introduced beneath it. The dissection is now made by pushing the finger up just beneath the mucous membrane to the apex of the rectocele if there be one; if not, extend the dissection as near the cervix as is thought necessary to give sufficient support to the perineum, and draw the anterior wall of the rectum forward to its normal position, when the sutures are put in. A feature of the operation is that the dissection is made in the shape of a triangle with its base at the vulva and its apex at or near the cervix, and instead of leaving a tongue of mucous membrane to be drawn up with a pursestring suture, as is done by Dr. Andrews, I remove the entire piece, leaving a complete triangle free from mucous membrane. In removing this tongue of mucous membrane and submucous tissue, I find it easier to do so by placing a long straight forcep on either side coming together at or near the cervix forming the apex of the triangle. The edges are more easily and completely approximated and perfect union more frequent when the edges are smooth and straight. I have been unable to get them so in any other manner. Up to this stage the operation presents few new features, but I think the next step, the manner of putting in the sutures, to be the most important part of the operation.

I use sterilized catgut, prepared so that it remains unabsorbed for ten or twelve days or longer, does not matter. I use about size 3 or 4 and use a medium-size cervix needle. Commencing near the apex of the denuded triangle, I introduce the needle about ¼ of an inch from the margin of the mucous membrane, passing downward and inward, coming out in the median line ¼ to ½ of an inch below the place of entrance, then entering the needle near the place of exit I pass it upward and outward coming out directly opposite the place of entrance of the first stitch. The next stitch is placed like the first about ¼ to ½ of an inch below the first one.

Continue in this manner until all the stitches are in, letting the last suture come just to the edge and center of the base of the denuded triangle. Commence tying at the apex and as each suture is tightened you can see that the recto-vaginal septum is thickened, the anterior wall of the rectum drawn forward and upward until all sutures are tightened and the remaining perineal

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surfaces are brought together with a continuous suture of catgut. The perineum and vagina to all external appearances, and so far as one can judge by palpation, are more nearly normal than after any other operation.

The advantages to me in this operation are: first, the ease with which it is done; second, the freedom from pain after it is done; and, third, the perfect results obtained.

Dr. A. P. Rooney, Horton, Kas., read the following paper on "The Microscope in General Medicine."

In writing this paper there is no intention of completely covering this vast field. Neither is it the intention to enumerate all these diseases in which the microscope may be used for diagnostic purposes, for that would necessitate a mention of a large majority of the diseases to which mankind is liable.

The use of the microscope in general medicine is comparatively recent. It is an instrument of precision. It, too, gives us frequently information of the highest importance obtainable by absolutely no other method.

Probably the use to which the microscope is most frequently put is the examination of urine. It is not the intention here to underestimate the value of chemical tests in examining urine—for they are indispensable—but to point out the necessity for making a microscopical examination in order to make an exact diagnosis, and hence to apply the appropriate therapeutic measures. We can frequently find hyaline or granular casts in the urine when ordinary tests for albumin are negative and, too, when found they are really of more importance than the presence of albumin.

In examining urinary specimens, the centrifuge which has become an important adjunct to the rapid and accurate microscopical examination is of the greatest assistance. With it the sediment may be precipitated immediately, thus saving the usual delay of twelve to twenty-four hours required to secure sedimentation by gravity. Furthermore casts or other organic material may be studied before they have time to macerate or be partially or totally destroyed by bacteria. The tubes of the centrifuge are filled with urine to be examined and are then rapidly revolved for about three minutes, at the end of which time all particles held in suspension are precipitated and are found in the bottom of the tubes.

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If the sediment consists of the normal mucus it will appear as a small whitish cloud at the bottom of the tube. Oxalate of lime gives a filmy whitish sediment; amorphous urates a pinkish, fawn or salmon color; while uric acid gives a "brick dust" sediment. Pus produces a heavy *yellowish* sediment, phosphates a heavy *white* sediment. Blood in *small quantities* produces a brownish deposit while in *large* amounts of it reddish coagulæ appear at bottom of the tube. A few drops from the bottom of the tube containing the sediment are removed by a glass pipette and placed on a slide for examination.

It is the sediments that concern us chiefly in microscopical examination aud these may be conveniently divided into organized and unorganized. The *organized deposits* in the urine are blood, pus, epithelium, mucus, casts, spermatozoa, micro-organisms and cancerous and tubercular matter. The *unorganized deposits* are uric acid and its salts, oxalates, phosphates, leucine and tyrosin, and cystin and cholestrin. Only the more important of these sediments will be discussed.

Of the *organized* sediments we have: (1) *Blood*, which is unmistakable on account of the biconcave circular discs. Their coloring matter is often washed out. The absence of a nucleus serves to distinguish them from yeast spores. This is the most convenient as well as the most reliable test for hematuria. (2) *Pus* is readily recognized by the large cell with nucleus. The addition of acetic acid causes it to swell and brings out the nucleus more clearly. (3) *Casts* have long been considered of great diagnostic significance. They are by far the most important of all the urinary deposits. They are found in all acute and chronic inflammatory conditions of the kidney. When found, and, by the aid of the centrifuge, they are readily discovered under the microscope, give information obtainable by absolutely no other method and which too, is of the greatest importance. By the kind and number of casts found in the urine the character and intensity of the inflammatory condition in the kidney may be estimated. In interstitial nephritis, for example, we expect to find *few* casts and those of the hyaline or granular varieties, whereas in the parenchymatous form there is found an abundance of casts, and while some of these may be hyaline or granular the one characteristic of this form of renal disease is the fatty cast. In acute nephritis practically all forms of casts are found, but in the number of casts, rather than in the amount of albumin, we have quite an accurate measure of the destruction of renal tissue taking place. There

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is another substance frequently found in the urine which we might include under casts and that is (4) Cylindroids. These are quite long flat ribbon like bodies. They occur in nephritis, cystitis and renal congestion or irritation and are frequently found in non albuminous urine. Have found them in patients who complained of pains in back, a little frequency of micturition and whose urine contained no albumin. A diuretic relieved these symptoms in a few days. The full significance of these bodies has not yet been fully determined, but it may safely be said they indicate at least a renal irritation. (5) *Spermatozoa* if present in urine are easily recognized as small transparent bodies having a head and tail, and if alive possessing very active movement. In renal *vesicle tuberculosis* the (6) *Bacilli* are found in the urine. Of course they are relatively scarce in the urine but by collecting the sediment from the tube several times and examining this sediment same as for sputum, to be described later, the bacilli are found.

Unorganized sediments (1) *crystals* of *uric acid*, although occurring in several different forms are readily recognized. They possess significance only when found in from four to six hours after being passed as any urine may separate them in ten to twelve hours. They are found in gouty or rheumatic persons or those who eat a great deal and take little exercise. Small, square, octahedral crystals which refract light strongly and look somewhat like back of square envelop are those of (2) *Oxalate* of *lime*. Oxaluria is quite significant as it is often a concomitant of melancholia due to defective metabolism. The finding of oxaluria separates this class of cases from those of true melancholia and indicates the use of nitrohydrochloric acid. (3) Crystals of *triple phosphate* occur in urine in two forms: flat-shaped somewhat like coffin lids—the prismatic form—and feathery or star-shaped masses—the pennate form.

These are of diagnostic importance *only* when found immediately after urine is voided as they will form in any urine if allowed to stand some time—until ammonical fermentation takes place. Now if found just after urine is passed they indicate that this ammonical fermentation is taking place in the bladder, a condition often seen in chronic cystitis and in some cases of paraplegia arising from injury to cord.

Other microscopical substances found in urine are of comparatively little importance and will not be discussed in this paper.

There is another field in which the microscope may be used to

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great advantage—that is in the study of micro-organisms. I don't think a general practitioner should devote relatively, a great portion of his time to bacteriology but there are three classes of quite common cases in which he may be much in doubt unless he takes advantage of the microscope.

These are urethritis, malaria and pulmonary tuberculosis.

(1) *Urethritis*—generally in this disease there is no question of diagnosis—as a rule the patient does that himself before he sees his physician. But not infrequently cases are met with which run a clinical course like true gonorrhœa and in the discharge of which no gonococci are found and hence the non-specific nature of the disease is indicated.

The diagnosis of these cases—the non-specific from the specific is rendered easy by the micropscopical examination of the purulent discharge and, too, it is the only exact sign we have. The importance of making this test in cases of doubt is at once apparent.

(2) *Malaria* is a disease which ordinarily is very easily recognized especially the intermittent variety, but even here confusion frequently arises with such diseases as tuberculosis when cavities form and pus collects, the puerparium, empyemia or with any form of suppuration.

Then, too, it is frequently mistaken for typhoid. Now the plasmodium malaria is in the blood and can be seen by spreading a drop of patient's blood on a cover glass and examine under 1-12 inch oil immersion objective. Generally a small hyaline body instead of a red blood cell with amæboid movement is found. Once these organisms are found there is no hesitancy or doubt about treatment, and if after careful searching they are *not found* it is hardly fair to continue heroic doses of quinine.

(3) *Pulmonary Tuberculosis*. It is well known that the bacilli in the sputum give an infallible sign of the existence of pulmonary tuberculosis and may be found in the sputum long before the physical signs are at all definite, and, too, it is well known that the *early detection* is of vital importance as successful treatment depends on the measures taken *before* the lungs are extensively involved.

The only way of immediately detecting the germ in the sputum is by staining. It is intermingled in the sputum with other micro-organisms, with epithelial cells, leucocytes, etc. Some of the sputum—those little yellowish bodies are best—is spread on a cover glass, dried and "fixed" to the cover glass by passing it

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through a flame for a few times and then stained by a special dye—carbol-fuchsine is probably the most commonly used. A few drops of this stain is put on the cover glass which is now held above the flames until small bubbles of steam begin to form, but avoiding actual ebullition. It is kept heated in this manner from one half to one minute. It is then rinsed in water and discolorized by dilute nitric acid and later by alcohol. This removes the dye from all except the tubercle bacillus which still retains the fucshine forced into it by the heat and strong chemicals used. Then some counter stain—methylene blue is used with fuchsine as the primary stain—is placed on the cover glass for fifteen to thirty seconds. It is now washed and mounted on a slide and is ready to be examined under the microscope. A 1-12 inch oil immersion is best to use here, although it may also be seen by a ⅓ or a 1-7 inch objective. The methylene blue stains everything blue except the tubercle bacillus, which retains the red from the fuchsine. Hence we have the bright red rods beaded somewhat and slightly bent—the tubercle bacillus—on a blue blackground.

By this method they can be stained and recognized when there are but very few present. Occasionally, however, we are unable to find the bacillus when by inoculation into animals we know they must be present.

But this is infrequent and rarely occurs if repeated examinations be made and due care exercised.

This method of diagnosis is by far the most important one we have for pulmonary tuberculosis. When the disease can be recognized by the physical signs there is practically no longer any hope for the patient's ultimate recovery. But if such a patient *should* recover a question as to the accuracy of the diagnosis would at once arise. The advantages claimed for this method are: (1) It is absolute—there are no doubts—there is no guess work. (2) It can be made sufficiently early so that by proper treatment recovery may take place—for pulmonary tuberculosis is now recognized as a curable affection.

These are probably the uses to which the microscope is most frequently put, although others readily suggest themselves as occasion arises—as for example the determination of the specific pus germ in a given inflammation, examination of the blood in the various anemiæ and leukæmias, microscopical examination of neoplastic growths, etc.

But enough has been said to indicate in a general way the importance of the microscope as a means of accurate diagnosis. It

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is one of our few instruments of precision. It has done much toward placing the practice of medicine on a scientific basis, and it is deserving of a more extensive use than it at present enjoys.

DISCUSSION.

Dr. Punton: The paper reflects great credit upon the doctor who wrote it. I think if it were printed and placed in the offices of general practitioners who use the microscope, it would save them a great deal of hard study upon the subjects which the paper makes so clear. I think the suggestions made are very valuable. Mention is made of the use of the miscroscope in phthisis and malaria. I believe that the time will come when we will make our diagnosis in functional nervous diseases by means of the microscope, or at least make by it a conformatory or compensatory diagnosis, just the same as we do now in the case of phthisis. I wish to express my thanks to the gentleman for his very excellent paper.

Dr. Dannaker: I think it may truly be said that this paper is a complete answer to the paper which was read here this afternoon by Dr. Reynolds on the subject, "How much of the Specialties Shall the General Practitioner Do?" There is a class of young men coming to the front, educated in pathology, in microscopical work, in general medicine, progressing from guesswork to facts. Not one of you dare make a positive diagnosis any more in an obscure case without the use of the microscope. Many cases have been made clear by urinary analysis and by microscopical investigation, by understanding that inoculation causes many diseases. Just so medical science is advancing. Less drugs are being used, and the result is just such a paper as we have here, a paper that raises the Society; raises the tone of every one who listens to it. I am happy to acknowledge the pleasure I feel from hearing it myself.

Dr. Gundry: The early diagnosis of consumption, before there is much expectoration, may be assisted by having the patient cough against a pane of glass, and then proceed with the staining process as in other cases. I have never seen this suggestion, but I think it excellent practice in early eases where there is little expectoration.

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Dr. D. F. Longenecker. Emporia, Kas., read the following paper on "Bone Formation in the Choroid With Report of a Case."

In presenting to this Society the subject of bone formation in the choroid, my principal object is to report a case and to exhibit to you a fine specimen of this formation.

True osseous tissue occurs, according to Knopp, in the eye only in consequence of plastic inflammation of the capillary layer of the choroid; whereas cretification may occur in all the tissues of the eye. While cretification may occur in any tissue of the eye, it is found more frequently in the lens, I believe, than in any other structure. It is most likely to be found in parts remote from nutritive blood vessels, whereas degeneration sets in first, while bone formation on the other hand, must be in close communication with the nutritive forces.

True bone is met with only in phthisical eyeballs, or eyes that have been blind for many years and is supposed to be in some way connected with colloid bodies which frequently form in eyes of this character. Brailey tells us that the osseous deposit occurs mostly on the retinal surface of the lamina vitrea, and when, as rarely happens, it does occur within the choroid, it extends no deeper than the chorio capillaris.

The starting point is usually at the optic disc, around which it forms a ring, and as extension takes place it becomes thicker here than elsewhere.

A foreign body, as a piece of steel, etc., may act as a nucleus for its primary appearance in other parts of the choroid. In extent of development, it may be found in various degrees, from a small, irregular plate to a complete cup reaching to the anterior limit of the choroid. It grows very slowly, and, according to Griffith in Norris and Oliver's late work on the eye, requires at least fifteen years to produce the large shell-like piece.

In the case I have to report, the growth has been rather more rapid than usual, as not more than eight years at most have contributed to its bulk, which you will see is pretty large. (Specimen was passed around.)

James B. N., age 23 years, of Chalk, Kansas, in 1892, while playing baseball, was accidently hit in the left eye with the ball; no serious consequences seemed to follow, nor was vision affected for three weeks later, when violent pain set in and vision was suddenly lost. He thereupon consulted Drs. Minney and Magee, and

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after a short treatment at their hands, was relieved of all pain and inflammation; the sight, however, was not restored.

After leaving the doctors care, he had no trouble whatever with the eye, excepting blindness, until the beginning of the present year. He, however, consulted me in 1897 for defective vision in the right eye, which proved to be only 15:200. The eye was found to be highly myopic, over 10 dioptres, with —10; vision became 20:50 which was the best vision we could get. The eye was fitted with —10 which glass has been worn to the present time.

In February of this year, he came to me again, with a history of slight irritation of the blind eye not amounting to pain, rather uneasiness, and also a sensitiveness to light in the other eye.

The left or blind eye, showed the presence of blood, a recent hemorrhage in the pupil which had been white before, or slight congestion of the blood vessels of the conjunctiva and tension amounting to hardness of the eyeball. The eye was normal in size, cornea clear, pupil round and of same size as fellow eye, but fixed and without movement. Enucleation was advised and consent gained. On opening the sclerotic I found the choroid and ciliary body forming almost a complete case for the humors within consisting of bone and cartilage. In the back part was a bony cup connected by trobecular processes of cartilage with the ciliary body, which also was cartilaginous and bony in formation, the bone comprising about a third of its circumference. The large cup-like bone in the back part measured sixteen m.m. across the top and six m.m. in depth, and in thickness from two m.m. at the back or bottom of cup shading down to a mere shell at the brim. The lens was cataractous. The humors of the eye presented a reddish brown appearance. All sensibility of right eye disappeared when recovery from operation had taken place.

DISCUSSION.

Dr. Minney: I have no discussion to make on this paper except to say that I saw this case, and it is certainly one in which the growth has been very rapid. I have had several of these cases, in one of which the bone occupied about one-half of the anterior globe of the eye, in which the injury had been received 13 years before we removed it. This is a case in which it grew very rapidly. It is an interesting case to me in that we treated this young man seven or eight years ago. Dr. Longenecker wrote to me for a report, but unfortunately we did not have any record of the case. But I remember the case. After the inflammatory reac-

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tion had quieted down we advised him not to have the eye enucleated. I think we are justified in leaving the eye in, in such a case, where the inflammation quiets down, giving the patient instruction not to delay if inflammatory action comes on, with pain or uneasiness in the eye, but to go to some one competent to treat it.

Dr. R. E. McVey, Topeka, Kas., read the following paper on "Eczema and its Treatment."

Eczema is a common disease and everybody knows how to treat it, but few understand upon what factors a treatment should be based. It is a protean disease which is possessed with the power of changing itself into most diverse and opposite appearances and assuming many different forms. It may commence as an erythematous spot or it may commence in the form of small vesicles, or again it may begin as small red papules or it may commence with little fine scales. The cardinal symptoms in eczema are redness, swelling, exudation and itching, all being the result of an inflammation seated in the epithelium of the skin.

The epithelium has no blood supply of its own, it is dependent upon the blood supply of the papillary layer which lies immediately beneath. Of course the skin has an enormous blood supply as it is a complex membrane with its nerves and glands and other tissues which are necessary to all its functions. Deviations from the normal in this blood supply to the skin from which the epithelium derives its nutrition, would more or less affect the metabolism of the epithelial cells, altering their nutrition. If in the blood any excrementitious substances should be retained and eliminated through the skin this deleterious substance might act as an irritant setting up inflammations in the epithelium.

In order to treat eczema scientifically a dermatologist should have an assistant who is thoroughly skilled in urinary analysis. In most every case of eczema there is variation from the normal, in the solid constituents of the urine, sometimes there is an excess of urea and uric acid, sometimes instead of being in excess they are diminished; again we find the chlorides and phosphates usually diminished and there are many crystalline substances to be found which are only understood by the urinary specialist. That there may be some kind of crystalloidal substance that should be eliminated by the kidneys but is not, and is eliminated through the skin, acting as an irritant, seems to be within the range of probabilities.

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It will take a long time before we thoroughly understand the chemical and metabolic changes going on in all the cells which go to make up the organism. The concensus of opinion in the profession seems more and more to regard the irritant setting up eczematous inflammations as a microbic organism so that the dermatologist needs not only a urinary specialist as assistant but also a microscopist who is an expert.

Gilchrist, of London, has made many examinations of the germs found in eczematous patients. He says: "Eczema was disappointing, and the work which I have done does not add much to our knowledge of the subject although it is interesting as far as it goes. The majority of the cases which have attended our clinic did not appear to be suitable ones for bacteriological examination. The results obtained from twenty-seven lesions in nineteen cases were as follows:

In five eczematous vesicles the cultures from four were sterile, one showed a few colonies of staphylococcus epidermidis albus. Four of these vesicles had appeared at different times on a patient's forearm and while under constant supervision. The lesions were typical eczematous vesicles, pinhead in size, thin-walled, clear, and in each instance about 12 to 24 hours old. Cultures from three vesicles were sterile; the fourth yielded a few colonies of staphylococcus epidermidis albus.

In second case of vesicular eczema the lesion was on the ear. Cultures were negative.

In the sterile cases no micro-organisms could be detected in the smears, but a few diplococci were found in the smears in cases in which cultures gave staphylococcus albus.

In eleven cultures from the extremities (nine cases) the aureus was obtained pure four times, and mixed with the albus twice, whereas in four intances the Staphylococcus epidermidis albus grew in pure culture. One culture was sterile. In one case, a typical weeping eczema of the leg, the first culture gave the aureus and albus; whereas after curetting off the surface portion of the lesion, a culture yielded the aureus pure, while after wiping the curetted area with alcohol, only one colony of the aureus was obtained. Ten cases of pustular eczema were examined. Two gave, in pure culture, the aureus; four the albus; three the aureus and albus. From one pustule which was very small cultures were negative." (Transactions, American Dermatological Association at its 23d annual meeting, June 1, 1899. Page 97.)

Although these examinations were disappointing I feel that

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bacteriology has not yet said its last word upon the subject. It requires time and patience and thorough skill in bacteriology to isolate and separate all the germs which may cause pathological changes in tissues.

Kromayer says that the hyalin or basement membrane of the epithelial structure of the skin has a double function, that is, it germinates epithelial cells on one side and connective tissue cells on the other side.

The cause of eczema seems at first to stimulate this germinating membrane by which the germination of the epithelial cells is disturbed. The membrane seems to be over stimulated, therefore its metabolic function is impaired; whether there is more epithelial cells germinated then the normal is not certainly known, but those that are germinated are impaired in their metabolic function. There is a loss of balance between assimilation and disassimilation. In the acute eczema, there is maceration taking place in these cells, hence the fluid that goes to make up the vesicles in the vesicular form of the disease. These cells in their normal condition are constantly undergoing transformation between the germinating layer and the corneous layer. They are not at all of course macerated nor converted into a fluid, but some of them have absorbed moisture from disintegrated cells and have become large and heavy and unfit for integration into normal tissues so they are thrown off and the result is that the corneous layer becomes undermined and from this fluid crusts are formed. This condition though does not last very long as the corneous layer is removed and we have a weeping surface which we call eczema madidans. There is no sharp dividing line between the acute and chronic eczema. In the chronic form of the disease, the germinating membrane not only proliferates ephthelial cells but connective tissue cells as well. These connective tissue cells do not undergo liquifaction but remain in the tissue and permeate the superficial layer of the corium, which is known as that of infiltration. The infiltrations are only made up of connective tissue cells and cause the thickening found in old eczematous patches.

In papular eczema the papillary layer is more or less involved in the inflammation. The exudation differs from that found in the epithelial cells being more plastic and does not penetrate the corneous layer. Both kinds of exudation may be present in the same patch but usually the vesicular form is observed where the skin is thin as seen upon the face, while the papular form is ob-

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served upon the extremities, where the skin is thicker and offers more resistance. The exudation of eczema differs from that of all other diseases. This peculiarity is best accounted for by some specific irritant which attaches itself to the skin and mucous membranes. This irritant probably belongs to the protophyta, which may not be represented by one particular germ but but by a family of germs which are similar in nature but have modifications in virulence.

In an erythematous eczema a germ of feeble vitality may penetrate the corneous layer, but not being able to get any further, causes irritation and inflammation with simple scaling only, while a germ belonging to the same class having more vigorous vitality might penetrate into the germinating layer itself and we get a vesicular eczema; again, a kindred germ or this same germ later might involve the papillary layer and remain there for an indefinite time setting up the pathological changes which are so often observed in eczematous patients and which will account for the protean manifestations already referred to in the beginning of the paper. Most people have an immunity against eczema as they do against other germ diseases. The predisposing cause is weakness in the skin, defects in assimilation and disassimilation. The same germ that effects the skin may also affect the mucous membrane of the intestinal canal as it is a carrier of foreign elements, it works in the dark while the skin works in the light. The same germs that might attach themselves upon the surface of the skin may also attach themselves to the surface of the intestinal tube and the germs themselves or their crystalloids may be carried by the circulation to the skin and act as irritants upon the skin and produce more or less constitutional symptoms or involvement. The most successful treatment points to the germ as the cause of the disease. Picric acid is a feeble germicide.

Picric acid is indicated in those forms of eczema in which the inflammation is acute and superficial and where the lesions are mostly epidermic. Under its influence the inflammation rapidly subsides and the acid forms, on contact with the oozing surfaces, a protective layer composed of coagulated proteid substances and epithelial debris under which healing takes place rapidly. Picric acid has a further advantage that it immediately stops itching. This effect is produced in chronic as well as acute forms of the disease. The method of employment is as follows: "A saturated solution of picric acid is painted on the affected parts the

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application extending slightly beyond the limits of the eczematous area, it is then covered with absorbent wool and it may be with a compress soaked in the same solution, over which the wool is applied. This is allowed to remain on about two days. The skin should be previously cleansed with some antiseptic, so that no suppurative organisms may be allowed to remain in contact with the diseased parts during the time they are covered with the wool dressing. The staining due to picric acid may subsequently be removed by washing in a saturated solution of lithia carbonate." (Sajous' Annual, Vol. III. p. 81.) In acute eczema I often prescribe boric acid grains 20, oxide of zinc ounces 1.

I have a patient, a young lady twenty years old, that I have been treating for some two or three months for a verrucous form of eczema of the hands. It seemed to have originated in the extra use of the hands in canning tomatoes, resulting in an epigenesis of epithelial cells in the balls of the thumbs and fingers that were brought into use that has incapacitated her from the use of her hands, both hands being involved in the affection. It has undermined the nails; the proliferation consisted entirely of epithelial cells. I curetted the sores twice a week and I used bichloride of mercury, five grains to the ounce of alcohol, but each time after curetting I used glacial acetic acid which seemed to do more good than anything else, but the epithelial cells seemed to accumulate almost as rapidly as at first.

I also used arsenical paste without any beneficial results so that I finally ceased all treatment but curetting, mercury and acetic acid. After three months treatment of this kind the disease was held in abeyance and patient is able to return to her work again. Pastes are superior to ointments in that they are able to absorb the secretion and leave a powder closely attached to the diseased surface. In chronic eczema, where there is infiltration, measures are required to stimulate the action of the absorbents and reinduce reabsorption in the lymphatics.

In some forms of chronic eczema baths are most effective means to stimulate the dormant blood vessels and lymphatics to renew activity. Hot water is often beneficial, the water should be used as hot on the parts as they can stand. Where the skin is thickened use:

R Zinci oxide, dr. j.
Ung. picis liq., dr. ss.
Ung. aquæ rosæ, oz. j.

Mix ft. ung. and if the thickness does not yield twenty grains

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of salicylic acid may be added if thought best. Where there is itching in a chronic form, the compound tincture of benzoin may be used or a five per cent solution of chloral. Betanaphthol is used as a substitute for the tarry preparations in chronic eczema. It obtunds the sensibility of the cutaneous nerves and stimulates absorption, It may be combined with sulphur and oxide of zinc ointment. Take of napthol half a dram, sublimated sulphur one dram and oxide of zinc one ounce. The mercurials are among the most valuable remedies that can be used in chronic eczema, the bichloride dissolved in water in the proportion of five grains to the ounce and sponged over the parts lessens the inflammatory action and allays the itching. The white precipitate may be used in benzoated zinc ointment, five grains to the ounce.

In the chemical analysis of the urine in most all of the eczematous patients, there was found from one to one-half per cent. of sulphur above the normal. Does the excess of sulphur in the urine indicate its diminution in the blood? If so will not this account for the presence of germs or their crystalloids which may exist in the skins of eczematous patients and owing to the lack of the presence of sulphur. In the peripheral circulation the epithelium becomes a fit soil for the lodgement and development of vegetable germs or their crystalloids which causes irritation. I found sulphur to be one of the most important remedies in the treatment of eczema. I use in strength of one to two drams to the ounce of rose ointment. In the seborrhœic forms of eczema the oil of cadeni, one dram to an ounce of vaseline, renders good service. Compression which is applied in the form of bandages or medicated plasters protects the parts and limits the spread of disease, lessens muscular tension and tones the dilated capillaries, prevents the escape of serum and assists in removing the effete products. In old chronic forms of eczema in the legs, where it is associated with ulcers, bandages are very useful as are also medicated compresses.

In many cases of chronic eczema the treatment is unsatisfactory, the patients will not carry out the treatment, and the tendency to relapses is very discouraging in the great length of time required to cause the absorption of infiltrations and to improve the local tone of the parts and establish the equilibrium between assimilation and disassimilation through an improved metabolism in the structures of the skin.

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DISCUSSION.

Dr. Frick: It seems to me that our knowledge on the subject of eczema is as yet very limited, but I think that there will be some advances made in our knowledge concerning it in the near future. It is said that eczema constitutes about one-third of all skin diseases. We are generally able to recognize it, although its appearances are so varied, sometimes moist, sometimes dry, sometimes papular, sometimes vesicular—a very great variety of appearances are to be seen. The causes of eczema, too, I believe to be varied. I do not think we will find any specific cause for eczema, but the idea today, as I understand it, that it is caused by a variety of things. We must remember that eczema is an inflammation of the skin; it is an inflammation of the mucous layer of the skin; it is eczema whether it is caused by one thing or another. We certainly find eczemas that are produced by the circulation—by some irritating material in the blood. I want to lay emphasis upon the fact, if I may do so without taking too much time of the Society, that when you have eczema, you must pay attention, not only to the local condition, but to the general condition of your patient. Here is where the knowledge of general medicine comes in the treatment of this special disease, eczema. You frequently find eczema in an infant, eczema of the scalp or of the face, caused usually by dietary errors. You can only succeed in curing the eczema by correcting the dietary errors. Oftentimes you will find eczema to be due to the circulation, to uric acid, or some other material in the blood that should be excreted by the liver or kidneys; consequently it is necessary in order to have success in the treatment of the disease, to pay attention, not only to local conditions, but to the general condition of your patient. In treating the acute as well as the chronic form of this disease, I always manage to incorporate some form of antiseptic along with my other remedies. We find the germs in the air, and on the skin, and it is this fact which gives value to our local antiseptics.

Dr. Brickell: I will state, as bearing upon the etiology of eczema that I have seen about a dozen cases occurring in persons who had been vaccinated. The vaccination had run its course, and the arm had apparentely healed, but a troublesome eczema appeared on the arm. It was something new to me. Whether it was due to the vaccine used or to the manner of using it, I

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cannot tell; but it appeared to be troublesome, was of a pustular character, sometimes extending all over the arm, and running onto the back.

Dr. Boyle: There is one point about eczema that I have met quite frequently and which has given me no little annoyance because it has taken so long to cure it, and that is infantile eczema. It is found usually among the lower classes where there is not a great degree of cleanliness. It usually appears in vesicles; the vesicles break and form scabs. The scalp becomes one mass of scabs and hair mixed together. I have never seen one case of infantile eczema in which the nutrution did not seem to be perfect.

I have in mind a case of a great, big, hearty, robust young fellow who was vaccinated. He had a frightful time, as he expressed it. He had a skin disease; some surgeons called it one thing, and some another thing; most of them called it eczema. When I saw him, the skin was thickened and reddened. It reminded me of one case I saw in the hospital in Philadelphia. His whole body was a mass of thickened tissue exfoliated in scabs.

Dr. R. E. McVey: Were they white?

Dr. Boyle: No, it was not leprosy or anything of that kind.

Dr. F. E. Schenck: The paper was a very interesting one to me. I know one family in which five children had the disease. Apparently the children were well when born, and were well up to the time they began cutting teeth; then the eczema appeared and continued until the children were through teething. In another case, a child got rather poor; cod liver oil appeared to do more good than anything else. Another form of the disease which has given me a good deal of trouble is that which affects the hand, making it dry and scaly.

W. F. Howard, A.B., M.D., Cuba, Kas., read the following paper on "The Position During Sleep as an Etiological Factor in the Location of Incipient Pulmonary Tuberculosis."

I have a brief observation to make on this subject which I have not seen in medical literature; nor has my observation been extensive. But to me the idea is very plausible, and it has been partially verified in all the cases that have come under my observation since the idea first occurred to me.

Lobular pneumonia is given by authorities as most frequently

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located in the lower right lobe, and pulmonary phthisis in the right apex. The size and direction of the right bronchus favors the turning of greater quantities of bacteria to the right lung than to the left. But the bronchial tubes are not apparently arranged to separate the pneumococcus from the bacillus tuberculosis. The difference in the circulation of the base and apex of the lung is held by some as the cause of the difference of location of these two diseases. Now I offer the position during sleep as a cause of the difference in circulation, and consequently a cause of the difference of location of these diseases.

Most persons sleep on the right side with the right arm drawn forward and toward the anterior median line of the body; with the forearm flexed and the hand under the face, and the body inclined toward venter downward. This position, from pressure, impedes the circulation and limits the respiratory motion of the apex of the right lung. The bacillus tuberculosis is able to gain a lodgement here, but is resisted by the more active circulation and respiratory motion of the other parts of the lung, and by this part except when impeded. Now, the pneumococci, as well as tubercle bacilli, are usually breathed into the lungs when one is in the upright position; and a greater number of each, and all, probably go to the base of the right lung. Here, or in any portion of the lungs, the pneumococci are able to overcome the resistance of the tissues provided other causative factors of pneumonia be present. It is the position during sleep that I present as an important cause of tuberculosis beginning in the apices of the lungs.

In thirteen cases of pulmonary tuberculosis I observed eight were of the right and five of the left apex. Of the eight patients, all say that they slept on the right side at the time questioned or before contracting the disease. Of the five, three say they slept on the left side and two on the right. I would be glad to hear this reported on by some one having the advantage of a larger observation.

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Dr. M. R. Mitchell, Topeka, Kas., read the following paper on "The Puerperium, its Indications and Possibilities."

The process of child-bearing is usually divided into four periods, namely: gestation, labor, the puerperium, and lactation.

The puerperium or puerperal state, applies to that part of the process which embraces the changes and conditions presented from the termination of the labor, to the complete restoration of the generative organs and the general system of the woman in the normal unimpregnated state.

A little observation and reflection upon the conditions, processes, and possibilities presented during the accomplishment of this period of child-bearing, have deeply impressed my mind with their importance and gravity, as affecting the immediate or remote welfare of the woman. There are at least two reasons for entertaining a belief as to the importance of this subject.

First—Because it has not been fully and practically appreciated by the majority of the profession, but is treated with comparative indifference, lesions more or less serious either neglected altogether, or if treated at all, the treatment is in a slovenly and unsurgical manner.

Second—Because, that an intelligent recognition of conditions, proper attention, timely and promptly rendered, might prevent a large percentage of the immediate, or subsequent ills of child-bearing women.

In a discussion of this subject, I do not claim to present any new information, or startling, unknown physiological or pathological facts, but simply to review certain conditions and processes which we all have observed, and perchance, I may leave an impression which will intensify our appreciation of the truth, that the puerperium is the one period, which is most liable to complicating changes, and fraught with the greatest difficulties and dangers.

It presents prominent physiological modifications, to which is applied the term involution. These modifications are accomplished by two dissimilar, and yet, simultaneous processes, namely, destructive and reparative.

Wonderful as it may seem, these two processes are strictly in accord with physiological laws, and may be accomplished without disturbance of the laws and evidences of health. Yet the demands are so excessive, and the approach of the pathological is

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so near, that but slight disturbing influences may cause an overstepping of the border line, and induce anomalies of excess or deficiency in the degenerative and reparative processes.

The parturient woman presents a traumatic condition. This may be slight, or it may be great. Thus, the denuded inner surface of the uterus, the abrasions or lacerations of the cervix, and the vaginal walls, present avenues for ready entrance of infection. The repair of these wounds, and the reproduction of a new endometrium, are always attended with conditions more or less surgically unfavorable.

There must be accomplished, also, the disposal of the great amount of redundant tissue, and the restoration of all the organs to the normal condition and function of the unimpregnated woman. All of these changes must be accomplished in the short space of time of six to eight weeks, by the two processes of degeneration and repair. These changes in connection with the fact of a depressed general condition, a disturbance of nutrition, and of the functions of the nervous system, consequent upon the ordeal of gestation and labor, press the thought that the puerperal woman, at this time, both mentally and physically, is especially susceptible to pathological lesions. And of the whole process of child-bearing, this period demands the most critical, watchful, and presonal attention, and the highest claim upon the skill of the accoucheuer, in the preventive and curative treatment of complications and accidents.

A qualification to successful management of a normal or abnormal case is a thorough apprehension of the normal conditions and processes of involution. What conditions do we find as to the sexual organs. There is the enormous increase in the dimensions and weight of the uterus, from two and a half or three inches to fourteen inches in length, from ten to twelve drachms, in the unimpregnated state, to two pounds weight immediately following the completion of labor, or twenty-five times its former weight.

Now, there is accomplished in this organ alone, the phenomenal disposal of nearly two pounds of tissue by fatty degeneration and absorption during the brief puerperal period.

It is claimed by investigators that the involution of the endometrium shows radical changes. When the ovular expulsion takes place, the ovum carries with it not only the epichorial decidua, but the inner cellular layer of the decidua-vera, leaving behind on the uterine wall the outer cellular layer, and the gland-

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ular structures of the endometrium. Then, on account of uterine construction and obliteration of many of the blood vessels, nutrition is impaired, and this external layer of decidual cells atrophies, assumes a condition of disintegration and degeneration, and passes away in the lochia.

Now, the glandular layer of the mucous membrane is laid bare but the epithelial cells within the glands, and the inter-glandular tissue soon take on active growth and a new mucous membrane is produced. Likewise, other organs of the generative apparatus, the ovaries, oviducts, ligaments, connective tissue, blood-vessels, nerves, and lymphatics all undergo extensive degenerative modification.

Other structures of the birth canal, such as the lower segment of the uterus and cervix, the vaginal walls, the vulva and perineal body, all of which being stretched to an extreme degree in the passage of the child, must undergo a rapid and decided involution to regain the accustomed tone and function. There is retraction of these overstretched structures, and also degeneration and absorption of redundant cell tissue resulting from the extensive blood supply necessitated by the pregnant process.

Although the most remarkable changes occurring in the puerperal state are in connection with the sexual system, yet there are necessary changes in other organs, and in the general system which take an important place in normal involution. For instance, the hypertrophied condition of the heart and kidneys incident to their increased functional activity in pregnancy, the restoration of the blood from the anemic and hydræmic conditions in pregnancy to the normal quantative and qualitative constituency of non-pregnancy. Also there is modification of the nervous system and restoration from a marked degree of atony and excessive irritability to its wonted functions.

Among the important processes of the puerperium are those of the evolution of the mammary glands and the establishment of the lacteal function. These also are liable to complicating conditions compromising the health and welfare of mother and child as well.

Allow me here to call attention to the fact that one of the most important features of the advancement in modern scientific medicine, are investigations of recent years in some of the large insane asylums regarding the causation of mental diseases among women. As a result of this movement, it is proven that a very large percentage of insane women, who have been married and

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borne children, are affected with some form of utero-ovarian disease. And further, the surgical relief of the utero-ovarian disease, often removes the psychic disorder. It may be safely presumed that the most of these gynecic complications followed the parturient process, and also that the same might have been prevented, and the peculiar mental phases, which landed these women in the asylum, would never have been observed, had timely and judicious care been rendered these unfortunate women during the puerperium, by the attending obstetrican.

On account of the profuse supply of the lymphatic and circulatory system in the pelvic structures of the parturient woman, there is afforded ready and extensive entrance of the toxic products of pathogenic germs, which are absorbed into the circulation and carried to all parts of the organism, the necessary result of which, is the breaking down of the blood corpuscles, and the overwhelming disturbance of the nerve centres.

There should be vigilance and systematic attention during the puerperium in every case, however simple and normal the labor may have been.

There ought to be a little more of the cleanliness according to Godliness, and a little more of the Listero-Pasteurean antisepsis as a prophylactic.

The era of antiseptics has won, and will win as brilliant victories against the invasions of the great common enemy upon the domain of obstetrics, as were ever achieved on the field of surgery,

Puerperal infection is the chief causal factor in the history of those lesions of the reproductive organs necessitating the subsequent mutilation or removal of these organs by the gynecologist.

And the gynecologist will confirm the assertion that many of these lesions, and operations for the same, were the result of defective care during the puerperal period.

A *sine qua non* is, therefore, early diagnosis. We must be ever on the alert for the "thunder clap in a clear sky."

Prompt, personal vigilance will often detect incipient slight disturbances, such as a rise of temperature to 100.5, or 101, a rapid pulse, a dry skin, peri-uterine pains, which a careless obstetrician may designate normal after pains, a perversion of the lochia as to quantity, appearance, or odor, and a restlessness, nervousness, and anxious condition of the woman.

These are some of the danger signals which may generally be averted by proper care. But if they should be observed to exist,

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wise attention will cause early disappearance, and involution will go on in normal way.

In conclusion, the obligations of the faithful obstetrician impose upon him the duty of frequent personal inspection as to the secreting and excreting organs, together with the local or general condition of the patient. And thus often, very often, a puerperal woman will be saved from being assigned to the list of subjects which furnish the stories of weeks, months, and years of suffering, of possibly being assigned to the insane asylum, or, eventually passing the ordeal of a critical surgical operation, or, perchance from landing in the laboratory of gynecological experimentation.

DISCUSSION.

Dr. Lane: It seems to me that there are one or two points in this paper, wherein the doctor speaks of antisepsis in the newly delivered woman that we ought to call attention to and condemn. I think that antiseptic methods and frequent examinations by physicians have quite as much to do with bad results as any one thing I know of. It is no wonder that many of these cases are left for the neighbors' wives to attend to, and that physicians are not called in at all. These antiseptics are proper enough for the physician but not as a rule for the patient. Given a vaginal tract implanted with virulent pus-forming germs; given another one equally healthy, and use antiseptics freely, and the one that has not been treated will eliminate the germs first. I make that statement; I think it has been proven. I mention it that physicians may not be led to doing too much. And this unrequited vigilance that the doctor speaks of is not practical. You take the average woman who is bearing children; she cannot receive this vigilance, that is not always the price of liberty. Frequently it is paid for by infection. There is another point—the psychoses that the doctor refers to. It happens quite frequently that perverted sexual functions are due to the psychoses, to the perverted psychic state, and not that the perverted sexual functions are the cause of the perverted psychic state. If it were not so, we should not have as many male insane as females.

Dr. Sawhill: This is one subject on which the country practitioner ought to be qualified to speak. I think we ought to try to educate people to be aseptic, not alone in their persons but in their clothing and in their surroundings; to prepare things and be ready when confinement comes. I was sent for last week to

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attend a case of labor. I knew nothing of it ten minutes before I went. When I got there, while they were nice people, and fairly well to do, I could not find a clean sheet in the house. How could we be aseptic under such conditions? The child was almost ready to be born into the world; I had no time to disinfect anything, scarcely my hands. I finally managed to get one clean sheet. I think as Dr. Lane. I think that injections both before and after labor had better be omitted, as a rule. I think if we keep the external parts of the body thoroughly cleansed; if the woman is in a good healthy condition, and we keep good aseptic clothing about her, that 90 per cent of the cases will come along all right.

Dr. Mitchell: Dr. Lane, I think, misunderstood me. He objects to my advancement of the idea that antisepsis should be exercised in relation to the puerperal woman during the puerperal state. One reason was that the practitioner did not have time, and then, on the other hand, that it was not necessary. Then he goes on and states how this antisepsis should be applied, and carried on, etc., in the way of cleanliness, and about the abuse of manipulation, etc. I did not intend to advance the idea that there should be unnecessary meddling in any way whatever. I do not say if a physician who does not have time to properly inspect as frequently as may be necessary to be made aware of the condition of the woman at the time, and following the birth of the child, had better go into a specialty of the eye or ear or something else and let obstetrics alone. The fact is this: In the puerperal state—in the puerperal woman—in many cases, you encounter neglect, or imperfect care. Of course, if you can take your patient to the hospital, where you have a trained nurse, you need not make frequent visits. but among those classes, too poor to employ a trained nurse, your responsibilities are greater. What I mean by vigilance is that you keep yourself thoroughly informed of the condition of the patient. There may be a perverted condition of the lochia, which we often find, and which may be the beginning of a septic condition. That is one point the physician should look after; if necessary he should take the cloth and hold it to his nose in order to ascertain whether it has a normal odor or whether it has a septic odor, and if he finds a septic odor it is a hint to him that there is something wrong. Take the temperature; that is another thing. You must look after all these points as to the condition of the patient. That is what I mean by vigilant care. I still contend as I did in the

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paper, that there is greater danger of complications, of lesions and septic conditions, after the child is born than before. It requires greater skill and a clearer head, and better scientific judgment to care for the patient following labor than it does to take the case through labor. I appeal to gynecologists who may be in this room to say if it is not true that the causation of some of these lesions which they see as surgeons is not, in many cases, neglect of the woman during the puerperal state. You have all visited patients, and what have you found? A nervous excited condition; a rising temperature; a putrid odor in connection with the lochial discharge; you find tenderness; sometimes you find a patient on the border of convulsions from nervous excitement. Now, I contend that the condition of your patient, in reference to these conditions, absolutely depends upon the vigilance and care with which you attend that woman until danger is past. I do not mean that you should make unnecessary examinations; I do not mean that you should use antiseptic injections or washes or anything of that kind unnecessarily, but suppose you have a septic condition, which sometimes follows a case of labor? Well, I suppose Dr. Lane would not use any antiseptic—

Dr. Lane: If you have septic infection in the vagina following labor, how did it get there?

Dr. Mitchell: By neglect often; or there may have been some shreds of membrane, or a piece of the placenta remaining there which has become putrid, and consequently you have got a putrid odor and this septic condition.

Dr. T. W. Peers, Topeka, Kas., read the following paper on "Modern Vaccination."

Currier has said, "If vaccine were the only discovery of the epoch, it would serve to render it illustrious forever."

The above sentiment prevails over the whole of the civilized world, and is believed by all persons who are conversant with the facts and who can weigh evidence. Almost as prevalent, is the belief that the discovery of this beneficent procedure was made by Dr. Edward Jenner, of England. It is not my purpose, in the brief historical outline that I shall give, to assail the wisdom of this belief, nor to detract from the honor due to Dr. Jenner. It is my purpose, however, to correct certain erroneous views concerning vaccination, and to show the truth in regard to Dr. Jenner and wherein his honor lies.

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First, a few words about the antiquity and fatality of smallpox. Records establish the prevalence of smallpox in China and India as early as 1122 B.C. But we may well believe that the world felt its ravages even earlier. Certain it is that, since that time, it has flourished continuously, as history shows; and its field of work has been almost the whole of the earth. It entered England in 1241 A.D.; Germany and Sweden about two centuries later. It was brought over to the West Indies in 1507 A. D., and into Mexico in 1527 A.D.; and Prescott thus describes its progress: "Smallpox swept over the land like fire over prairies, smiting down prince and peasant, and adding another to the long train of woes that followed the march of the white man.

"It swept down towards the Pacific, leaving its path strewn with the dead bodies of the natives, who, in the strong language of a contemporary, perished in heaps like cattle stricken with murrain." History tells of the terrific death rate of unmodified smallpox, and from the many recorded epidemics this fact is brought out. In a severe epidemic about 50 per cent. of those not vaccinated get the disease and about 50 per cent. of those having it die. A summary of the beneficent results of vaccination shows that about 6 per cent. of persons who have been successfully vaccinated take the disease and only 4 per cent. die. The statistics in regard to the number taking smallpox after vaccination are not at all complete and 6 per cent. is decidedly less than my experience would indicate. I believe it to be nearer 40 per cent. but in a modified form. I desire to make it plain that the above statements are based on a large number of cases, and that only such statistics are valuable. Individual experience counts for very little by itself and is often very misleading. A former city physician of this city, who had charge of an epidemic of smallpox, tells me that he was unable to see the slightest benefit from vaccination.

My experience, in the early days of the present epidemic, was similar. It seemed to me that quite as many who had been previously vaccinated came down with the disease and had it just as severely. In one family of eight persons, four had been vaccinated and four not, and those who had been vaccinated all had it decidedly harder than those not vaccinated. In another family of five persons not one of whom had been vaccinated only one was severely sick, the others having it very light, and about a month after their recovery I vaccinated them all and every one took normally. Of late, and especially since using the glycerinated

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virus in glass tubes my results show a marked protection for vaccination.

Vaccination has done so much for us, and statistics are so overwhelming in its favor that we are apt to expect too much, and it is to this point that I desire to call particular attention. Many persons, and some doctors, expect vaccination to produce immunity in most every instance, and to modify materially the few cases that are not immune. I certainly had that impression and was greatly disappointed in seeing case after case come down after vaccination, and have the disease almost as severely as others who had never been vaccinated.

A few facts in regard to the subject will show not only the difficulty in arriving at a proper conclusion, but also will show the factors entering into the problem.

First—One vaccination does not, in many cases, produce immunity.

Second—Some persons who have been successfully vaccinated die of smallpox.

Third—Persons who have had smallpox have been known to again take the disease. Even a third attack has been noted several times.

Fourth—Some are immune without vaccination.

Fifth—The disease is most variable as to severity, both in the vaccinated and unvaccinated.

Now then, suppose I vaccinate a patient and get a normal result and soon after he has smallpox, and it runs a very mild course. How can I tell whether this was from vaccination or because he was not very susceptible?

Again, suppose I vaccinate two ladies, who are badly pock marked from a severe attack of smallpox, which had occurred several years previously, and suppose I get a normal vaccine sore, and several weeks thereafter they take the smallpox and both die. Shall I say vaccination is worthless? What shall we say in regard to the family of five persons, who were successfully vaccinated only a few weeks after having smallpox? These questions are not idle ones, but are based upon actual cases and represent the difficulties in arriving at a just conclusion from personal experience. One cannot tell in an individual case of mild smallpox whether it was a natural partial immunity or was modified by vaccination; but, when thousands and even hundreds of thousand cases are recorded, and vaccination runs the death rate from 50 per cent. to 4 per cent. no one can reasonably question

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its value. It has been my fortune to see between 20 and 30 persons come down with smallpox this year who had had previous attacks. I have also seen scores come down who had been previously vaccinated. I saw others vaccinated and escape, and some who had had smallpox escape and I could not keep back the question, Why is this? and what is it that produces immunity in some cases? It seemed to me that I could see a direct relation between the typical character of the vaccine scar and the mildness of the attack; also, those vaccinated several times seemed to have it less severe, or not at all. I also came across the statistics for Germany, how that in 1874 compulsory vaccination was enacted the first year and again the tenth year and how her death rate from smallpox fell from 143,000 in 1871 to 150 in 1877, and I said if two vaccinations are better than one why not vaccinate three or four, or even a dozen times.

The text-books say, if a person is vaccinated and it "takes," it shows that he would have taken smallpox if he had been exposed, but if the virus was good and it was properly applied, and did not take, then, he was an immune, so I deduced this proposition.

If you will vaccinate a person and revaccinate him, until it will not take, you can make an immune of him.

Why does the German government wait ten years to revaccinate? Why do the text-books recommend revaccination every 5 to 15 years? Why don't they revaccinate in two or three months and repeat until they have made an immune of the baby before it is a year old? In my opinion the reason has been, in very large measure, because of the many severely sore arms that have hitherto resulted from vaccination. People are afraid to be vaccinated and some say they would rather risk getting smallpox than be vaccinated.

There are two theories attempting to explain the fact of immunity from vaccination. One, that there is a substance in the body on which the vaccine bacilli if the poison comes from bacilli feed, and a person is not an immune until this has been used up. On this theory frequent vaccination is the logical conclusion because one vaccination may not be enough to use up all that is in the body. The other theory is that nature always tries to get rid of a poison or foreign body, and when the vaccine virus or poison is introduced into the blood, a new substance is produced in the blood which has the power of resisting the poison, and in preventing it from harming the body. On this theory, too, frequent vaccination is the logical procedure, because one vaccina-

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tion may not be enough to produce a sufficient quantity of the protective substance to completely kill any virus that may be introduced into the body. This would also explain why a person may have smallpox more than once, and also why vaccination at times "takes" more than once. Having given my opinion as to vaccination, and stated my belief in frequent vaccination at short intervals until no response is obtained; and having given my reason for its failure to be adapted, I am brought to the real subject of my paper, namely, modern vaccination.

In order that we may contrast it with past methods I have prepared a brief sketch of its history. The prevention of smallpox, by introducing the disease into a healthy person reaches back into antiquity. "It is mentioned in the Sanskrit Vedas as then performed, always by Brahmins, who employed pus procured from smallpox pustules a year before. They rubbed the place selected for operation until it was red, then scratched with a sharp instrument, and laid upon the place cotton soaked in the variolous pus, moistened with water from the sacred Ganges. Along with this they insisted upon most hygienic regulations, to which in a large measure their good results were due."

The Chinese about 1000 years before Christ soaked bits of cotton in variolous pus and placed it in the nostrils of children. The Arabians and Circassians inoculated with needles. In Constantinople under the Greeks, women practiced the art and regarded it as a revelation from St. Mary. The first accounts of this practice was given to the Royal Society by Timoni, a physician of Constantinople in 1714 A.D. The actual introduction into the West, however, was due to Lady Mary Wortley Montagu who died in 1762. She had her son inoculated in Constantinople by her surgeon Maitland, and after her return to London, in 1721, it was also performed upon her daughter. It was more or less employed from that time on. In 1746, the Bishop of Worcester recommended it from the pulpit. Dr. Edward Jenner who was born at Berkeley, 1749, began to practice at his home in 1773 and soon had his attention called to the immunity of the milk maids who had had cow-pox. He told John Hunter about it, and received this advice "Don't think, but try: be patient, be accurate." He acted upon this advice and after experimenting for over twenty years he published the details of twenty-three cases in 1798. It was received with indifference at first but soon with open hostility. "It was asserted that vaccinated children became ox-faced, and that abscesses broke out indicating sprouting

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horns, and that the countenance gradually changed into the visage of a cow, the voice into the bellowing of bulls."

Two ladies of title—Lady Ducie and Countess of Berkeley—had the courage to vaccinate their children, and the prejudices of the day were at once broken through. Jenner triumphed and honors were heaped upon him. Dr. Marchand, of Canton, Ohio, says of him: "The success of vaccination, enunciated by Jenner, formed a nucleus for the medical profession to begin operations in preventive medicine. It concentrated medical thought upon the true nature of contagion. It started a new sanitary science. It proved that disease can be prevented or, at least, modified. It has removed a scourge from the face of the earth, and by so doing I am not too prophetical in predicting that theother scourges which menace the race await similar solutions at our hands."

A few decades ago vaccination was practiced by cutting through the skin and introducing a small piece of a scab taken from some person. The next step was to use bovine virus in the same way with no aseptic precautions whatever. Then instead of the scab the pus was taken and used on quill points. About the time of the World's fair in Chicago (1893) attention was called to pus and other pathogenic germs in the virus, and those who were supplying vaccine virus began to study how to get rid of them, and succeeded in some measure, but not until a few years ago when glycerine was employed and mixed with the lymph; and great care in the management and aseptic manipulation of the heifers, and virus, did we get a perfect vaccine. So accustomed had we become to having the vaccine wound become infected, that many physicians reported the glycerinized tubes worthless, when, as a matter-of-fact, they had gotten perfect results. Such an instance came under my observation. A physician of large practice in this city, vaccinated ten persons during one visit, and a couple of weeks after became disgusted with the tubes because "not one of the ten had taken." The mother of the family reported the case to me and an examination of seven of the ten vaccinated, revealed typical vaccine scars without infection on five of them. The other three I did not examine. During the winter, I have, with the help of Dr. Horn, vaccinated about 1,100 persons. It has been impossible for me to keep an accurate account of the cases, but judging from the cases that were kept account of I must have had over 90 per cent. of successful primary vaccinations. I used nearly 1000 of Parke Davis & Co's, glycerinized tubes and over 100 of Mulford's Out

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of the whole number I did not have a single badly infected arm and of the 1000 cases vaccinated by Parke Davis & Co's., tubes only four showed any infection whatever and three of these were infected by scratching off the scab with dirty finger nails. Two of the latest and best works on diseases of children give illustrations of vaccine sores and *both* show infected sores as *normal* vaccinations. I have demonstrated to my entire satisfaction that it is not necessary to have any pus whatever in a vaccine sore, and that the sores without pus or other infection are just as protective.

The essential principles involved in modern vaccination are these:

First—Get an aseptic and active glycerinized lymph.

Second—Prepare an aseptic surface before scarifying.

Third—Use an aseptic scarifier.

Fourth—Remove the epidermis only so that serum will ooze, but no—or very little—blood.

Fifth—Rub in the lymph thoroughly.

Sixth—Let it dry thoroughly before anything touches it.

Seventh—Prevent any abrasion which would allow the entrance of infective material.

A modern vaccination performed as above will show a dry, brown, thin scab about one-fourth by one-half of an inch in size, for from three to five days. Occasionally seven, ten or even twenty days may elapse and the scab entirely disappear before any reaction is noted. Then small, bright red papules show themselves around the edge of the scab and often directly under it. These become large and coalesce and take on a dark cherry-red color, slight vesicles showing over it. The sore is then one, the first scab produced by scarifying drops off and the papular spot is raised above the surface of the skin abruptly for 1-16 to 1-8 of an inch. In about ten days from the time of the first appearance of the papule, a scab is formed and is ready to fall off. A redish scar is left, about even with the skin, and showing the characteristic points of vaccination. If this course follows vaccination it is a "take" whether the sore is the size of a pin head or a five cent piece.

As a rule, no fever, whatever, and no severe soreness or swelling is felt about the mark. There is some soreness on the spot and often considerable itching, but no annoyance of any kind, sufficient to prevent sleep or work should be felt.

In conclusion, I desire to say that one of the best investments a

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state, county or city could possibly make, would be to equip its physician with the very best of modern vaccine materials and instruments and pay him fifty cents for each person vaccinated and have him vaccinate every man, woman and child who had not been vaccinated within the year 1900, and in three months revaccinate them all. It is actually cheaper to vaccinate one hundred persons twice, than to properly quarantine and care for one person with smallpox.

DISCUSSION.

Dr. Porter: I have treated 400 cases with glycerinized lymph, and Dr. Peers' results are exactly my own. The reaction was very slight. The only objection that I can see to it—and, of course, we have not figures enough yet to demonetrate its effectiveness—is that it does not convince people of their immunity. I have vaccinated my four children; the boy I have vaccinated several times and it won't take any more. I presume he is immune, but I expect to practice still further on the girls. I think Dr. Peers is right. I don't believe you can set a limit to the time within which you will secure immunity. Ten years I think is sufficient. I expect to again vaccinate the menbers of my own family.

Dr. Boyle: I must say that that is one of the best, if not the best paper that has been read to this Society at this session. It is especially timely in view of the wide prevalence of smallpox over the State. I have learned one or two points in regard to vaccination that I did not know before. A number of cases I have vaccinated, and re-vaccinated and re-vaccinated when I think they must have taken, according to Dr, Peers' idea. A very serious drawback in the use of the glycerinized virus is the long time which it takes to dry. We have no smallpox in our town, but neighboring cities have had it and we have been dilligent in preparing for it, and I vaccinated a great many people; they were obliged to stand around for a long time; finally I resorted to the use of bunion plaster with good results.

Dr. Taylor: I have not had the experience, of course, that our city physician has had, but I have vaccinated perhaps 125 people. I soon found an annoyance about this matter of drying. It was quite an annoyance to have a roomful of people waiting for an hour or such a matter, but I got around that by using vaccine seals, when they were in a hurry. I used what I supposed was

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reasonable precaution. I first washed my hands, but not in an antiseptic fluid, but with soap and water; scrubbed the arm with soap and water, and then washed it off with 95 per cent of alcohol and washed my scalpel with alcohol, waited until the arm was thoroughly dry and then used the glycerinated tubes, and waited until it was thoroughly dry. At first, I used sterlized gauze, but I got some infection and soon abandoned that kind of dressing and used nothing but the seal, and that did very well. I cleansed the instrument every time, using reasonable cleanliness in every respect, and I presume I got infection in two or three per cent of the cases.

Dr. Lane: The Doctor's gauze is very much like Dr. Mitchell's, septic condition following labor; he planted the germs there or they would not have grown. There is another point of which I wish to speak, and that is, immunity. Immunity may be within us. We have numerous illustrations of it. Immunity against smallpox, as in other diseases, may be natural or hereditary or it may be acquired, and it may have reference to other diseases; it does not matter whether it is smallpox, or scarlet fever, measles, diphtheria or Texas fever. Some people are born with immunity; others acquire it. It is said that the Japanese do not have the measles, for instance. Mention has been made of the attenuation of this virus. It was said that the Chinese by the process of time had brought about an attenuation of the virus. It was mentioned here today that light seemed to have a favorable effect in destroying the tubercle bacillus. Light, temperature, modifying circumstances, do mitigate the virulence of these germs. I presume every physician is asked: Do you believe in vaccination? Will it protect me? How long will it protect me? Will it be necessary to be vaccinated again? The school children of my city are required to be vaccinated every five years. Occasionally some gentleman from Topeka of ample means will come over to Leavenworth for a change of air and bring the smallpox with him, but we are usually very free from the disease, having only one case where you have a hundred here.

Dr. Mead. I am very much pleased with the paper, and particularly because the evening paper under flaming head lines said that the medical profession was going to the demnition bowwows on account of vaccination because Dr. Peers had read a paper against vaccination. It is an excellent paper, and entirely different from what it was reported it would be in the evening paper. I simply want to call attention to that fact because the

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the anti- vaccinationist will take it up and it will go all over the country and perhaps all over the world before it is corrected.

Dr. Axtell: It seems to me that every surgeon will appreciate what has been said here tonight about vaccination. Certainly no one is capable of vaccinating; no one is competent to vaccinate a patient, who does not know how to sterilize his instruments, himself and the patient, and yet I have seen some horrible work of vaccination. This epidemic of smallpox has been all over the State; thousands of people have been vaccinated, and yet we have hundreds of physicians who have not learned how to vaccinate. I was glad to have this brought out so well here tonight. It seems to me that the greatest danger is in the scalpel. I would not consider alcohol sufficient to sterilize it. Boiling for 20 minutes, is to my mind, the ideal way. Now, it is true, as the doctor says, that an isolated case does not count for much, and yet I have had some experience that was so favorable to vaccination that I would like to mention a few cases. One man who had been vaccinated three weeks previous to the smallpox epidemic contracted the disease but so mild that it amounted to nothing; not a mark was left. In a family of five, one came down with the smallpox; it was severe enough to mark the patient. The other four members of the family were vaccinated immediately. One of them had varialoid, but it was a very mild case, amounting to nothing and left no marks,

Dr. Brickell: I would like to ask the Doctor, in closing, to state whether or not any of his cases were followed by eczema some weeks after vaccination, and after the vaccine sores had entirely healed.

Dr. Peers: I have seen three such cases; one was a case that I vaccinated and the other two were cases vaccinated by other physicians where eczema followed, one right along with the vaccination and the other two some time afterwards. The drying process is a little tedious, but it is worth while. I depend on that for my protection. If I wait I wait long enough for the glycerine to dry, I believe it secures protection, and does not require dressing afterwards. The ideal way to vaccinate, to my mind, is with a hypodermic syringe, but this is only practicable where a considerable number of persons are to be vaccinated. If your syringe is clean there is little danger of infection. I have been asked how I vaccinate. I wash the arm off with soap and water, and then with alcohol, and scarify with an old gum lancet. I think it is the nicest thing we have for the purpose. I sterilize

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the instrument by holding it over an alcohol flame until it is pretty nearly red hot, and then put it into sterilized water. I do that after each vaccination. That has been sufficient in my cases to give me good results. Boiling, of course, is the best way because it does not ruin the instrument so much as the heating but it takes a good deal longer, and where you have a large number of persons to vaccinate it is a very tedious process to do it. My paper was necessarily so brief that I omitted several important points. In the latter part of the epidemic I saw beautiful results of the protective influence of vaccination. In regard to the report which was printed in the Evening Journal, I want to apologize to the Society for it. The fact is that that paper has persistently misrepresented me throughout the epidemic here. The newspaper reporters come to me and I take pains to tell them carefully what they want to know and they go off and publish something entirely different. You see how it is in my paper; I think I have made it clear to you that I am an advocate of vaccination; I not only want people to be vaccinated but I want them to be vaccinated every few months. I think vaccination is a grand thing, one of the greatest medical discoveries of the world, and I want to give the Society the benefit of the experience which we have had here in this city. The sum of the whole matter is this: That one vaccination alone will not prevent you from having smallpox, but it does modify the disease. This is my position in regard to vaccination.

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CONSTITUTION AND BY-LAWS.

ARTICLE I.—NAME.

SECTION 1. The name of this Society shall be The Kansas Medical Society.

ARTICLE II.—OBJECTS.

SECTION 1. The object of this Society shall be the advancement of medical knowledge, the elevation of the medical profession, and the promotion of all measures adapted to the relief of suffering, the improvement of the health, and the protection of the lives of the community.

ARTICLE III.—MEMBERS.

SECTION 1. The permanent members shall consist of those who are members of this Society at the time of the adoption of this constitution, and who shall continue to conform to the by-laws, and have maintained their membership as provided by the by-laws.

Physicians who are graduates of reputable medical colleges, and who are regular practitioners of medicine in Kansas, and who shall be recommended by two members in good standing of this Society, may become members by application.

The following application shall be filled in and signed by the applicant, and signed by two members of the Society in good standing, and accompanied by the membership fee and one year's dues.

Form of Application.

(Date).....

I hereby make application for membership in the Kansas Medical Society, and enclose herewith five dollars, for membership fee (three dollars) and one years dues (two dollars.) I am a graduate of.....of the year ....., and a regular practitioner in the State of Kansas; and I hereby subscribe to the rules and regulations of the Kansas Medical Society, and agree to abide by the same.

Name.....

Address.....

Recommended by.....

.....

We have examined the credentials of..... ., and recommend him for membership in the Kansas Medical Society.

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Board of Censors.

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The application shall be referred to the Board of Censors who shall attest the same, after which it may be acted upon by the Society.

Article IV.—Officers.

Section 1. The officers of this Society shall consist of the President, two Vice-Presidents, a Recording Secretary, a Corresponding Secretary, a Treasurer, the Librarian, and a Judicial Council of five and a Publishing Committee of five. The officers shall be elected at the annual meeting, and shall hold their offices for one year, or until their successors are elected, except the Recording Secretary, who shall be elected for three years, and the Judicial Council, which shall be elected, one for one year, one for two years, one for three years, one for four years, and one for five years, and thereafter one shall be elected annually.

Article V.—Meetings.

Section 1. One regular meeting shall be held each year at a place to be chosen by a majority of those members present. Special meetings may be held as provided by the by-laws.

Article VI.—Code of Ethics.

Section 1. The Code of Ethics of this Society shall be that of the American Medical Association, which is hereby acknowledged as binding upon all its members.

Article VII.—Punishments.

Section 1. This Society shall have the power to censure, suspend or expel any member convicted of violating its provisions, or who may be guilty of any act which may be considered derogatory to the honor of the medical profession, on the recommendation of the Judicial Council, and in the manner provided in the By-Laws, and by a vote of three-fourths of the members present.

Article VIII.—Auxiliary Societies.

Section 1. The members of the profession in any county or district in the State may form a county or district society, which shall become auxiliary to this State Society, and entitled to send delegates whenever its constitution and by-laws have been approved by the Judicial Council of this Society.

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ARTICLE IX.—AMENDMENTS.

SECTION 1. This Constitution may be amended or altered by the proposed amendment or alteration being submitted in full in writing at the annual meeting, and spread upon the minutes. At the next annual meeting it may be taken up and acted upon and if the proposed amendment, or the substance thereof, receives the vote of three-fourths of the members present, it shall be adopted.

BY-LAWS.

ARTICLE I.—DUTIES OF OFFICERS.

SECTION 1. The terms of the officers shall commence at the close of the meeting at which they are elected.

SEC. 2. The President shall preside at all meetings of the Society, preserve order, appoint all committees not otherwise provided for, sign all orders upon the Treasurer for the payment of money when ordered by the Society, and perform such other duties as the Society may require of him. At the annual meeting during his term of office he shall deliver an adress upon some appropriate subject.

SEC. 3. In the absence of the President the First Vice-President—and in his absence also the Second Vice-President—shall act as President. In the absence of the President and both Vice-Presidents the Society shall elect a President *pro tempore*.

SEC. 4. The Recording Secretary shall keep a correct record of all the proceedings of the Society, and prepare the same for publication; and shall have charge of and carefully preserve all the books, papers, and other documents of the Society, and keep a list of the members with their post-office addresses; notify new members of their election within thirty days thereafter; attest all orders drawn upon the Treasurer by order of the Society, and discharge such other duties as may be required of him, and make a report of his doings and the condition of the society at each annual meeting.

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SEC. 5. The Corresponding Secretary shall attend to all correspondence, arrange papers for publication, make programs for meetings and send notices of meetings of the Society, and whatever duties may appertain to the office.

SEC. 6. The Treasurer shall have charge of the funds of the Society, and collect all moneys due the Society and receipt for same; pay out money only on orders signed by the President and attested by the Recording Secretary, and at each annual meeting submit a detailed report of the exact condition of the treasury; and, at the end of his term, hand over to his successor all moneys and other property belonging to his office.

SEC. 7. It shall be the duty of the Judicial Council to examine the constitution and by-laws of the auxiliary societies, and, when approved, to transmit a copy to the Secretary of this Society with their approval. They shall examine into all ethical questions which may come up on appeal from any auxiliary society in this Society, and give their decision thereon to this Society through the Secretary annually.

SEC. 8. It shall be the duty of the Librarian to preserve all the books, pamphlets and pathological specimens belonging to the Society, and keep the same where they can be consulted and examined by the members as they may desire.

ARTICLE II.—SECTIONS.

SECTION 1. The Society shall be divided up into sections as follows: Practice of Medicine and Electric Therapeutics, Surgery, Gynecology, Ophthalmology, Rhinology and Otology; each of which shall have a secretary, who shall provide an appropriate part of the program for his section, and transmit it within time, to the committee on program hereinafter provided for.

SEC. 2. At each meeting of the Society, the President shall appoint a committee of three members whose duty it shall be to arrange a program for the following year. In making up the program the committee shall intersperse the papers by their subjects, so as to give variety throughout the entire program.

SEC. 3. All papers shall be read, and all business transacted in the general sessions of the Society, over which the President shall preside; provided that for the year 1897, the chairman of the various sections elected in 1896, shall preside jointly with the President, and after 1896 no chairmen of sections shall be elected.

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ARTICLE III.—COMMITTEES.

SECTION 1. The Publication Committee shall consist of the Secretary of each section and the Recording Secretary of the Society, who shall be chairman of the same.

SEC. 2. The Committee on Nominations shall consist of one member from each county represented in the meeting of the Society, which shall be named by members of the several counties, who shall report to the Society the names of suitable persons for officers, and the regular committees for the ensuing year. They may also nominate special committees to report on such subjects as they may deem advisable.

SEC. 3 At each meeting there shall also be appointed a Committee of Arrangements and Credentials for the ensuing meeting whose duty shall be to make all necessary arrangements for the meeting, prepare the program, and examine the credentials of all delegates and permanent members who shall attend, and report the same to the Society.

ARTICLE IV.—FEES AND DUES.

SECTION 1. The initation fee shall be $3. Every member shall pay $2 dues annually, to be collected at the annual meeting. Assessments may be made at any meeting by a vote of two-thirds of the members present. Any member who is in arrears for dues for three years shall be dropped from membership.

SEC. 2. The penalty for a violation of the Constitution, By-Laws or Code of Ethics, shall be fine, suspension or expulsion. An affirmative vote of three-fourths of the members present shall be necessary for the suspension or expulsion, to be taken after the decision of the Judicial Council, and without debate.

ARTICLE V.—MISCELLANEOUS.

SECTION 1. *Quorum*—Five members shall constitute a quorum for the transaction of business.

SEC. 2. *Special Meetings*—Special meetings may be called by the President and Secretary, on the written request of three members; the Secretary to give ten days' notice to each member of the time, place and objects of said meeting; and no business shall be transacted except such as shall bave been designated in the call.

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SEC. 3. *Notice*—A notice shall be valid which has been served personally, or by writing deposited in the postoffice to the address of the party.

SEC. 4. *Usage*—Parlimentary usage shall govern in the transaction of business, when not otherwise provided for.

SEC. 5. *Amendments*—These By-Laws may be suspended or amended at an annual meeting, by resolution submitted in writing, and receiving two-thirds majority of the members present.

ARTICLE VI.—PAPERS.

SECTION 1. All papers read before the Society become the property of the same, and must be handed to the Secretary at once. Only the names of members of the Society shall appear on the program for papers except by invitation.

SEC. 2. All papers read before this Society shall be limited to twenty minutes.

ARTICLE VII.—ORDER OF BUSINESS.

1. Reading minutes of previous meeting.
2. Report of Committee of Arrangements and Credentials.
3. Calling the roll of members.
4. Election of new members.
5. Address of President.
6. Appointment of Auditing and Nominating Committees.
7. Report of officers.
8. Report of regular committees.
9. Report of special committees.
10. Reading of volunteer papers and communications.
11. Report of Nominating Committee, and action on the same.
12. Report of Committee on Necrology, Auditing Committee.
13. Miscellaneous business, appointing committees.
14. Adjournment.

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LIST OF MEMBERS.

Armstrong, E.. .....Greenleaf
Axtell, J. T.....Newton
Arbuthnot, C. M.....Belleville
Abdelal, A. G.....Lawrence
Alkire, H. L.....Topeka
Allen, F. T.....Neodesha
Adams, Harriet E.....Topeka
Allen, Arthur E.. ....Utica

Bryan, J. D.....Ottawa
Black, R. S.....Ottawa
Basham, D. W.....Neal
Boone, Wm. W.....Highland
Barker, W. E .....Chanute
Bower, W. C.....Lebanon
Barnes, Ida C.....Topeka
Bradley, C. C.....Topeka
Boyd, G. A.....Edgerton
Buck, L. A.....Peabody
Boyle, G. A .....Lewisburg
Barber, P. W.....Oswego
Brickell, J. B.....Americus
Berry, J. Albert.....Topeka

Cole, Geo. E.....Girard
Coldren, E. V..... Topeka
Collins, Melvin.....Oxford
Carson, A. W.....Dover
Cave, T. R.....Westmoreland
Clarke, Jessie K.....Topeka
Calnan, G. B.....Powhattan

Davis, J. T.....Independence
Daugherty, P.....Junction City
Dally, F. M.....Beloit
Dunn, F. P.....Ellinwood
Dillon, J.....Eureka
Damour, F.....Balchow, Mo
Davis, A. M.....Colony
Dinsmore, R. S .....Troy
Deever, H. J.....Robinson
Davis, Edward G.....Kansas City, Ks

Eastman, B. D.....Topeka
Egleston, J. C.....Topeka
Esterly, D. E.....Topeka

Flack, A. C.....Fredonia
Fay, J, R.....Chanute
Furst, O. J.....Peabody
Fabrique, A. H.....Wichita

Garey, J. H.....Wilsey
Gill, H Z.....Pittsburg
Grubbs, L. Y.....Topeka

Gardner, M. N.....Greenleaf
Gardiner, Chas.....Emporia
Gundry, A. E .....St. Marys
Goddard, C. C.....Leavenworth
Green, D. E.....Pleasanton
Grise l W. S.....Ransom
Groff, W. D.....Nortonville
Green, F. F.....Olathe
Gray, G. M.....Kansas City, Ks

Hartwell, Geo. N.....Jamestown
Hamill, Thos.....Olathe
Hamilton, E. F. ....Wichita
Hissem, H. Z.....Ellsworth
Hoover, W. D.....Paola
Hogeboom, Geo. W....Topeka
Hawley, J. E.....Burr Oak
Hastings, H. E.....Olathe
Harris, B, F.....Marion
Hollenbeak, G. W.....Cimarron
Hall, W. C.....Coffeyville
Hogeboom, H. B.....Topeka
Hereford, W. C.....Admire
Hughes, P. D. ..... Kansas City, Ks
Halthall, J. D.....Paola
Herring, Aaron.....Highland
Hall, Fred C. Jr.....Cuba
Hardesty, H. O.....Narka
Howard, W. F.....Cuba
Hammond, Chas.....Topeka

Janes, L. K.....Williamsburg
James, J. W.....Columbus
Jones, D. C.....
Soldiers Home, Dayton, Ohio
Jacobs, L. D.....Emporia
Johnston, G. F. .....Leot
Jones, B. E..... ....Buffalo
Judd, C. E.....Topeka
Jones, G. W.....Lawrence

Kamp, Wm.....Belleville
Kaster, J. P.....Topeka
Keith, H. H.....Topeka

Leslie, B. H,.....Lawrence
Leslie, C. F.....Clyde
Longenecker, D. F.....Emporia
Lindsay, W. S.....Topeka
Lewis, J. P.....Topeka
Lobdell, M. J.....Beloit
Longshore, D. K.....Topeka
Lindley, J. M.....Atchison
Lane, Jas. A.....Leavenworth
Leary, M. F.....Gaylord

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Love, J. E.....Whiting
Latta, J. M.....Millerton

Magee, R. S. .....Topeka
Miller, J. E.....Salina
Moll, Lewis.....Hanover
McClintock, J. C.....Topeka
Mitchell, M. R.....Topeka
McGuire, C. A.....Topeka
Minney, J. E.....Topeka
McVey, W. E.....Topeka
Munn, L. H.....Topeka
Mathis, W. H.....Waverly
McClellan, G. B.....Wier City
Maintz, R. W.....Linn
McCarty, C. E.....Dodge City
McIntire, E.....Topeka
Martin, W. M.....Wellington
McDonald, W. S..... Ft. Scott
Miller, H. H.....Rossville
McCartha, T. L.....Dodge City
Murdock, S*.....Oneida
Miner, H. C.....Topeka
Mulvane, G. J.....Topeka
Morton, R. J.....Green
Milligan, J. A.....Garnett
McClellan, H. H.....St. Marys
McCrea, Maggie L.....Winchester
Mead, W. B.....Oberlin
McCandless, A. B.....Holton
Moose, F. D..... Lawrence
May, J. W.....Kansas City, Ks
McLaughlin, H. T.....Topeka
Morehead, J. L.....Neodesha
McVey, R. E.....Topeka
Milton, C. A.....Dodge City
Morrison, C. E.....Great Bend
Meade, R. H.....Great Bend
Martin. F. H.....Topeka
Manning, H. W.....Eureka
Moore, R. M.....Olathe

Norman, E J.....Eureka

Ochiltree, H. M.....Haddam
Oldham, J. E. .....Wichita
O'Donnell, H.....Ellsworth

Preston. J. F.....Effingham
Porter, J. W.....Pittsburg
Peters, A, B.....Mankato
Purdue, G. C.....Wichita
Payne, E. B.....Galena
Priest. W. R.....Concordia
Powell. L. M.....Topeka
Peers T. W..... Topeka
Porter, M. C .....Clay Center
Phillips. E. D. F.....Lawrence
Pickerel, J. F .....Beverley

Reynolds, L.....Horton
Rairdon, C. W.....Havensville
Reese, W. H.....Pleasanton
Roberts, R. A.....Kansas City, Ks
Rees, J. B.....Mapleton
Robinson, H. H.....Eudora
Rooney, A. P.....Topeka

Slagle. B. W.....Smith Center
Stapleton, F. P.....Lynn
Scott, Jno. R.....Clay Center
Spitler. S. W.....Wellington
Stewart, J. P.....Clay Center
Sawtell, J. E .....Kansas City, Ks
Sawhill, W. F.....Concordia
Surber, C. C.....Delphos
Seabrook. C. C.....Burlingame
Sabine, Andrew.....Garden City
Stewart. S. G.....Topeka
Scammon, E, A.....Columbus
Sutherland. H. H.....Herrington
Smethers, W. H.....Moline.
Sidlinger, S. H. .....Hutchinson
Shaffer, C. P.....Morrill
Shelly, J. F.....Elmdale
Sexton, M. P.....Bonner Springs
Schenck, W. L.....Topeka
Shelley, E. T.....Atchison
Simonton, E. L.....Wamego
Stephen. J. J.....Soldier
Schenck, F. E.....Burlingame

Trueheart, P. P.....Sterling
Taylor, N. J.....Berryton
Tenny, A. P.....Kansas City, Ks.
Tyler, D. C.....Clifton
Tefft, H. K.....Topeka
Taylor. D. O.....Greeley
Tracy, F. M.....Kansas City, Ks.
Trisler, L. S.....Fall River
Taylor, O. A.....Topeka
Thompson, S. H.....Kansas City, Ks

Uhls, L. L.....Osawatomie

Venard. J. M.....Ness City
Van Eman, W J.....Leavenworth
VanStovern, D. C....Garnett

Ward. M. B.....Kansas City, Mo.
Whitteca-, O. B.....Peabody
Wood, D. L.....Dighton
Wilson, D. D.....Nortonville
Warner, H. A.....Topeka
Wallace, Agnes M.... Topeka
Wilhoit. J. W.....St. George
Wiley, F. M.....Fredonia
Wilson, W. P.....Westmoreland
Welch, T. E.....Emporia
Williams, Wm.....Pittsburg
Willston, S. W.....Lawrence

*Granted demit, May, 1900.

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